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## **Nursing in Nova Scotia: Strengthening the Foundation**

**August 1999**

**Health Human Resources Planning Division  
Health Services Support Branch  
Nova Scotia Department of Health**

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## EXECUTIVE SUMMARY

In 1997, the Provincial Leadership Committee (PLC) established a Working Group on Health Human Resources Planning with the mandate to develop a comprehensive health human resources plan for Nova Scotia. The primary objective of the Committee was to develop a collaborative, high-level strategy that would enable the province to achieve an appropriate supply of health human resources. In the midst of this planning exercise, growing concerns about an impending nursing shortage had spread to virtually every province in Canada. In response, the PLC, in the Fall of 1998, directed the Working Group to address the nursing supply issue as its number one priority.

To build a comprehensive picture of the provincial nursing situation, the project integrated the results of three separate approaches: (1) internal research and literature reviews, (2) external research contracts, and (3) focus group consultations. The internal research initiatives included an analysis of nursing supply trends; a forecast of future supply; reviews of staff mix; nursing education programs; and the multiple inter-related factors that contribute to our ability to recruit and retain nurses in Nova Scotia. In addition, the Health Human Resources Planning Unit, in collaboration with the Registered Nurses Association of Nova Scotia, conducted a Nursing "Re-Recruitment" Survey to determine the potential for re-recruiting those RNs who had left the province and/or the nursing profession. A Nursing Utilization Survey was also conducted in collaboration with the Regional Health Boards (RHBs), Non-Designated Organizations (NDOs) and the Continuing Care sector, to get a clearer indication of nurse utilization and deployment patterns throughout the province.

External research contracts included a collaborative project between Dalhousie University's Population Health Research Unit and School of Nursing to review the factors that determine the demand for nurses and to develop a model to forecast Nova Scotia's need for nursing human resources over the next five years. A study was also commissioned to assess Nursing Workload Measurement Systems in Nova Scotia and to identify changes which would make such systems more effective in the future.

Finally, a series of focus group consultations were carried out to confirm priority nursing issues to guide project planning initiatives. Focus group participants represented a cross section of all major stakeholders, including RHBs, NDOs and every major sector of the province's nursing community.

Findings revealed significant changes in nursing in recent years, primarily as a result of health care reform initiatives beginning in the mid-1990s. While in previous decades Nova Scotia's nursing workforce had experienced a net growth of over 100 registered nurses per year, reaching a peak of 10,067 in 1993, the province recorded an average net loss of about 150 nurses per year over the subsequent five years. Losses were mainly from regular full-time positions; the number of registered nurses employed in full-time nursing positions fell by nearly 800 between 1993 and 1998. With declining full-time positions, institutions have become increasingly dependent on the casual

nursing workforce. Currently, over 23 percent of nurses are employed on a casual basis. They have become increasingly disenchanted with casual employment and would often rather leave the province than accept these positions. At the same time, the reduction in numbers of hospital beds and the shorter lengths of stay have resulted in a significant increase in patient acuity. As such, traditional staffing ratios (nurses per bed or patient days), staff mix ratios (RNs to LPNS) and deployment patterns (casuals to full-time positions) are proving to be inadequate to meet these new demands. Consequently, core staff are required to work significant over-time and call-back hours, further eroding morale and the working environment.

Furthermore, with the closure of the diploma schools of nursing and the expansion of the university nursing baccalaureate programs, funded nursing positions dropped from about 330 in 1990 to about 210 in 1998. Given the four year lead time, the first new university nursing students did not graduate until 1999. With less than 80 nursing graduates being produced annually between 1996 and 1998, and many of these electing to leave the province for better employment opportunities, the overall growth of the nursing workforce was further curtailed.

Nova Scotia recorded the greatest percentage loss in nurses over the last five years of any province in Canada. Accordingly, its nurse-to-population ratio dropped from second to fourth place over that period. With the recent creation of an additional 13,000 full-time positions throughout the country, Nova Scotia has dropped to fifth position overall.

If the province is to achieve a stable and sustainable health care delivery system, an immediate and significant investment in Nova Scotia's nursing workforce will be required. This report outlines the need for the development of *enabling conditions* which integrate stakeholder responsibility and commitment at the following levels:

*Provincial strategies* - appropriate funding, workforce optimization initiatives, legislation, research, information support systems, and education programs;

*Regional management strategies* - strategies within the Regions and by Non-Designated Organizations, which enhance recruitment and retention strategies, through improved work life conditions, more effective deployment and staff mix;

*Policy and planning* - initiatives that enhance communications, promote partnerships and opportunities for collaborative planning that involve government, the regions, health care institutions and the nursing profession.

Health human resources accounts for well over 70 percent of the operating budgets of health care institutions. With nurses (registered nurses and licensed practical nurses) accounting for about 60 percent of the entire health workforce and almost 30 percent of the entire provincial health care budget, planning an optimal nursing workforce is of paramount importance.

## RECOMMENDATIONS

### PROVINCIAL STRATEGIES

#### ISSUE: FUNDING

1. The Department of Health develop, in consultation with nursing and other major stakeholders, innovative funding mechanisms with appropriate incentives, that support the following principles:
  - a) the exploration of alternative models of health care delivery;
  - b) the establishment of funding envelopes that more closely match the identified needs of the population;
  - c) improved access to health services;
  - d) a more efficient and effective use of health care professionals to the full levels of their competency;
  - e) broader professional accountability for the quality, outcomes and integration of the care they provide.

#### ISSUE: WORKFORCE

2. Stabilize the nursing workforce by funding 1999/2000 nursing staff resources based on actual nursing utilization for 1998/99, as determined by key stakeholders.
3. Re-examine, as a research and planning priority, the future demand for nurses, as a function of the aging population within the context of a health professional workforce that will be re-tooled to more effectively meet the province's future requirements.

#### ISSUE: LEGISLATION AND REGULATION

4. Pending supporting recommendations from Nova Scotia's Primary Care Projects, amend the *Registered Nurses Act* and associated regulations, as required, to provide for the regulation of Nurse Practitioners in Nova Scotia.

5. Amend the *Licensed Practical Nurses Act*, to provide for improved regulation of practical nursing in Nova Scotia.
6. Amend the *Homes for Special Care Act* to provide for improved regulation of the Personal Care Worker.

#### **ISSUE: RESEARCH**

7. Explore and evaluate research in the areas inter-disciplinary education and employment to enhance workforce efficiency and flexibility.
8. Support integrated and collaborative approaches to nursing research at provincial, regional and national levels.

#### **ISSUE: HEALTH MANAGEMENT INFORMATION SYSTEMS**

9. In cooperation with the RNANS and the Practical Nurses Licensing Board, enhance the DOH nursing database through the addition of information to annual registration forms about nursing qualifications, employment patterns and places of employment within and outside the province.
10. Develop and maintain, in consultation with health care institutions/agencies, a process to collect consistent data to facilitate short and long-term nursing human resource planning and a mechanism for reporting information from relevant government departments and agencies.
11. In collaboration with stakeholders, articulate a provincial strategy for a management information system which will: reflect the data needs of users; ensure user commitment; provide for collection of comprehensive data on health care status, nursing interventions and client outcomes; and will be appropriately resourced for ongoing development and maintenance.
12. Create an advisory group representing all health sectors to determine the common elements required to meet nursing's basic information needs.

#### **ISSUE: EDUCATION**

13. Fund an enrollment expansion of 70 learners to Dalhousie University and St. Francis Xavier University to increase the total seat capacity from 210 to 280. Establish a satellite campus of St. Francis Xavier in the Cape Breton Region.
14. Define enrollment targets and priority program locations to meet the projected demand for LPNs, to ensure the system does not continue to build an oversupply.



15. Establish formal processes and systems to promote dialogue and collaborative evaluation with regard to education programs and graduate competence.
16. Establish a mechanism to ensure accountable, cooperative, coordinated, needs-based specialty education which optimizes resources.
17. Develop a mechanism for base nursing budgeting which provides for mandatory orientation, mandatory competence development and continuing professional development.
18. Enhance the availability of Telehealth for nursing education at all levels and all regions.

## **REGIONAL MANAGEMENT STRATEGIES**

### **ISSUE: UTILIZATION AND DEPLOYMENT**

19. Significantly reduce the number of nurses in casual positions, while ensuring that the need for contingency staffing is met.
20. Create better working conditions for those nurses who work in casual positions by providing appropriate orientation, regular hours, employment benefits and wait-listing for full-time employment.

### **ISSUE: RECRUITMENT AND RETENTION**

21. Develop strategies to improve work life, including professional and structured opportunities for nurses to participate in patient care decision making at both the corporate and operational levels.
22. Fund a comprehensive marketing, communication and recruitment plan for the nursing profession.

### **ISSUE: STAFF MIX**

23. Initiate further research into staff mix models with respect to future job design, educational requirements, workload implications, quality of work life and standards of practice and the evaluation of staffing pilot projects.

## **POLICY AND PLANNING**

### **ISSUE: NURSING HUMAN RESOURCES PLANNING AND IMPLEMENTATION STRATEGIES**

24. Develop standards, monitoring and evaluation systems to inform policy direction and ensure a coordinated, integrated provincial nursing human resources planning process.
25. Implement a nursing human resources consultation process that integrates all health care sectors.
26. Establish a mechanism to ensure implementation of the approved recommendations.



## INTRODUCTION

### BACKGROUND

In 1997, the Provincial Leadership Committee (PLC) established a Working Group on Health Human Resources Planning with the mandate to develop a comprehensive health human resources plan for Nova Scotia (Appendix A). The primary objective of the Committee was to develop a collaborative, high-level strategy that would enable the province to achieve an appropriate supply of health human resources. The Committee's strategy included identifying the appropriate enabling conditions - legislation, education, funding, information systems, roles and partnerships - required to assist the Health Regions, the Non-Designated Organizations (NDOs) and the Department of Health in developing a provincial master plan.

In the midst of this planning exercise a new priority arose. Concerns of a significant provincial shortage of critical care and continuing care nurses were beginning to surface throughout the province. In addition, a shortage of available nurses to fill casual vacancies was also beginning to emerge. The PLC asked the Working Group to investigate the issue. A review was conducted and a report *Code Blue: Critical Care Nursing in Nova Scotia* was produced which recommended increased funding for critical care training programs throughout the province. By the time the review was completed, growing concerns about an impending general nursing shortage had spread to virtually every province in Canada. These concerns were fueled by a report produced by the Canadian Nurses Association *The Ryten Report* which predicted a potential national shortage of up to 100,000 nurses by the year 2011.

In response, the PLC, in the Fall of 1998, directed the Working Group on Health Human Resources Planning to address the nursing supply issue as its number one priority.

### ISSUE

The Deputy Minister of Health and the Provincial Leadership Committee posed the following questions to the Working Group:

- Is there currently a nursing "crisis" in Nova Scotia?
- If yes, what evidence is there to confirm this notion?
- What is the nursing supply situation expected to be in the future?
- How many nurses does Nova Scotia optimally require, now and in the future?
- How do we achieve and maintain an appropriate supply of nurses in Nova Scotia?

The question that lay at the heart of the nursing "crisis" question was whether the current situation was the result of an overall shortage of nurses, a shortage of funded nursing positions, a nurse deployment issue, or some combination of these.

## **PURPOSE**

In light of the directive from the PLC, the goal of the Working Group on Health Human Resources Planning was to develop a comprehensive nursing human resources plan that would enable the province to *achieve and maintain an optimal and stable nursing workforce that cost-effectively meets the identified health care needs of Nova Scotians*. This would be achieved by creating a nursing workforce that is portable, flexible, adaptable, accountable and sustainable, and able to provide a continuum of high quality health care services by ensuring that "the right person with the right qualifications is in the right job in the right place at the right time and at the right cost."

The approach would be collaborative and patient-focused and guided by the broad principles of equity, efficiency and social justice.

## **METHOD**

In an attempt to build as comprehensive a picture of the provincial nursing situation as possible, the project endeavored to integrate the results of three separate approaches: (1) internal projects and literature searches, (2) external research contracts, and (3) focus group consultations.

### **Internal Projects and Literature Searches**

The Department of Health's Human Resources Planning Unit provided in-house secretariat and research support for this nursing planning project (Appendix B). A Senior Nurse Advisor was appointed by the Deputy Minister to provide nursing policy advice and expertise to guide the project.

The internal research initiatives included an analysis of nursing supply trends (Appendix C) and a forecast of future supply (Appendix D) based on historical nursing registration data provided by the Registered Nurses' Association of Nova Scotia (RNANS) and the Practical Nurses Licensing Board. Other internal research initiatives included a review of staff mix, including the complex factors that have to be considered when changing staffing ratios (Appendix E); nursing education, including undergraduate, post-diploma and continuing education needs (Appendix F); and the multiple inter-related factors that contribute to our ability to recruit and retain nurses in Nova Scotia (Appendix G).

In addition the Health Human Resources Planning Unit, in collaboration with the RNANS, conducted a Nursing "Re-Recruitment" Survey of nurses under fifty years of age who had left nursing and/or the province over the past five years (Appendix H). The purpose of the review was to determine the reasons for their leaving, what would entice them to return to work in Nova Scotia, as well as what approaches could be taken to enhance our overall retention of nurses in the province, now and in the future.

In collaboration with the Health Regions, NDOs and the Continuing Care sector, a province-wide Nursing Utilization Survey was conducted (Appendix I). The purpose of the survey was to get a clearer indication of how nurses were being deployed throughout the province, an estimate of nursing hours and FTE's, the demands that nursing services were making on current budgets and an overall sense of the capacity of nursing to respond to current and projected needs.

### **External Research Contracts**

A collaborative project between Dalhousie University's Population Health Research Unit and the Dalhousie School of Nursing was commissioned to review the factors that determine the demand for nurses, to review approaches in other jurisdictions and to develop a model to forecast Nova Scotia's need for nursing human resources over the next five years (Appendix J). The study used historical trends in Provincial Acute Care (and where available Continuing Care) utilization data. Baseline utilization data, standardized for age and sex, was projected to the year 2004.

A study was also commissioned to assess Nursing Workload Measurement Systems (NWMS) in Nova Scotia and to identify changes which would make such systems more effective in the future (Appendix K). Such a system would be considered in combination with a province-wide comprehensive nursing information system.

### **Focus Group Consultations**

Given the complexity of the topic, the project team endeavored to conduct a collaborative nursing human resources project which engaged all major stakeholders, including the Health Regions, Non-Designated Organizations and every major sector of the province's nursing community. Rather than establish a large nursing sub-committee, the group elected to utilize existing nursing structures and create short-term nursing focus groups that would allow the broadest representation possible and enhance our ability to tap into defined areas of nursing experience and expertise, as required, on a topic by topic basis.

The nursing focus groups and consultation sessions were a key component of the project and were used extensively to identify and confirm priority nursing issues to guide project planning initiatives (Appendix L).

At the beginning of the project a broad-based nursing focus group session was held, along with four sessions with third and fourth year nursing students to help determine overall project priorities. Four main issues were identified: education, casualization, staff mix and workload measurements systems. These priorities were then confirmed and research initiatives defined in consultation with the Patient Care Leadership Group (Appendix M), representing the Acute Care sector, and the Continuing Care Advisory Committee which represented the Home Care and Long Term Care sectors. An *Ad Hoc* Research Steering Committee, involving the NSNU, NSGEU, the RNANS, the LPNANS and the NSAHO, was also struck to oversee the external research contracts (Appendix N).

These priority areas also formed the basis of twelve major focus group consultation sessions with provincial representation from every sector of nursing. These groups confirmed the issues, defined strategies to resolve these concerns as well as the necessary conditions needed to achieve success. A final two-day wrap-up session with representation from each of the primary nursing focus groups, as well as the Nova Scotia Association of Health Organizations (NSAHO), the Nova Scotia Council on Higher Education and the Department of Health was held to finalize strategies (Appendix O).

At the request of the Deputy Minister of Health, an *Ad Hoc* Nursing Advisory Group as a sub-set of the nursing focus group, was convened to identify key priorities with immediate budgetary implications (Appendix P). The group was also used to vet the overall interpretation and conclusions of the nursing human resources planning project. As participants in this process, the Patient Care Leadership Group also provided the *Ad Hoc* group and the Department of Health with estimates of the number of core nursing staffing positions needed to more adequately maintain our health care system at its current level of service utilization.

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The main findings of this review have been included in summary form in the Issues and Recommendations section of this report. More details of these initiatives can be found in the Appendices. Reports entitled *Stakeholder Consultations* and *Forecasting the Future Demand for Nurses* will be available in their entirety under separate cover.

## **HEALTH ENVIRONMENT**

### **Historical**

Over the past decade, Canada's health care system has undergone unprecedented change. Following the release of Royal Commission Reports, virtually every jurisdiction in Canada undertook significant health and fiscal reform initiatives.

Similarly new directions were undertaken in Nova Scotia, which emphasized de-institutionalization (shifting the emphasis from Acute Care), decentralization (including regionalization and the development of Regional Health Boards) with a stronger focus on the Home Care and Long Term Care sectors. New primary health care initiatives, alternative funding and delivery mechanisms and a more fully integrated, community-based continuum of care have been consistent themes of this strategy.

Initially, there was general consensus throughout the country that the health care system was adequately funded, and that with the more efficient and effective delivery of health care services, there would be savings that could be reallocated to the other program areas in support of the transition. However, the costs of funding this transition, the costs of continuing to support the current system during the transition period and the time frame in which significant savings could be achieved, were underestimated.

Concurrently, major fiscal reform initiatives were also underway in all provinces with commitments to reduce deficits and balance budgets - in light of reduced federal transfer payments - through a program of increased fiscal restraint. While this goal of long-term fiscal responsibility was a sound one, it put increased pressures on most provinces' capacity to provide adequate resources for change within their respective health systems. In addition to these increased pressures on the health care budgets overall, there was increased internal pressure to reallocate resources among program areas. Between 1993 and 1997, acute care beds were reduced by over 30 percent in conjunction with significant growth in the Home Care and Long Term Care sectors. The cost of physician services and Pharmacare also continued to rise over this period. These pressures were compounded by the fact that virtually every province voiced concerns about their ongoing ability to sustain public support for ongoing changes within the health care delivery system. Managing the potential increase in demand for services in the future due to a rapidly aging population and growth in new technologies compounded these concerns.

Health human resources accounts for well over 70 percent of the operating budgets of health care institutions. With nurses (registered nurses and licensed practical nurses) accounting for about 60 percent of the entire health workforce and almost 30 percent of the entire provincial health care budget, interest in planning an optimal nursing workforce became of paramount importance during this period.



While nursing has traditionally undergone wide swings in demand (between a shortage and a surplus) in five to seven year cycles, this trend appeared to abate in the early 1990's as the growth in the number of nurses reached the point where the workforce appeared to have sufficient reserve capacity to respond to these cyclical changes in demand. Then with the implementation of a labour force adjustment strategy in 1995, and a reduction in funded nursing positions within hospitals, this reserve capacity grew to the point where a perceived nursing "surplus" situation arose but this perception was soon to change.

### **Current Situation**

While historically Nova Scotia's nursing workforce had experienced a net growth of over 100 nurses per year for the past couple of decades, reaching a high of 10,067 registered nurses in 1993, the province recorded a net loss of about 150 nurses per year over the last five years. Nurses left the province, or left nursing, because of the decline in employment opportunities. While regular full-time jobs decreased by 800 positions over the past five years, total casual positions have increased by 150. While nurses appeared to leave initially because of a loss of employment opportunities generally, most recently nurses have left because of an unwillingness to accept the casual positions that are available to them.

With declining full-time positions, institutions have become increasingly dependent on the casual nursing workforce. Currently over 2,000 nurses are employed casually, with 1,300 of these in hospitals. Nurses have become increasingly disenchanted with casual employment and would often rather leave the province than accept these positions. With the reduction in numbers of hospital beds and the shorter lengths of stay, patient acuity has increased significantly. As such, traditional staffing ratios (nurses per bed or patient days), staff mix ratios (RNs to LPNs), deployment patterns (casuals to full-time positions) and current workload measurement systems at most institutions are proving to be inadequate tools to allocate nursing resources appropriately to meet these new demands and acuity levels. With declining numbers of nurses who are willing to work casually, core staff are required to work significant overtime and call-back hours to meet patient demands, further eroding morale and the working environment.

With the closure of the diploma schools of nursing and the expansion of the university nursing baccalaureate programs, funded nursing positions dropped from about 330 in 1990 to about 210 in 1998. Given the four year lead time, the first new university nursing students will not graduate until 1999. With less than 80 nursing graduates being produced annually between 1996-98, and most of these electing to leave the province for other employment opportunities, the overall growth of the nursing workforce was further curtailed.

Two provincial vacancy surveys conducted six-months apart revealed that there were about a couple of dozen vacant positions for full-time staff nurses, and it was expected that these would be filled quickly. With respect to casuals, however, many regions declared that they would employ all they could get. Thus, in the space of less than four years, the nursing surplus exhibited signs of an impending nursing shortage.

Nova Scotia recorded the greatest percentage loss in nurses over the last five years of any province in Canada (Appendix Q). Accordingly, its nurse-to-population ratio dropped from second to fourth place over that period. With the recent creation of an additional 13,000 full-time positions throughout the country, Nova Scotia has dropped to fifth position overall. By contrast, the province's physician-to-population ratio has remained in third place nationally. Nova Scotia's nurse-to-physician ratio, however, ranked in eighth place compared to other provinces. Nurse's employment participation rate in Nova Scotia is 96 percent compared to 87 percent in other provinces, indicating a smaller reserve capacity in our nursing workforce to respond to any increases in demand. And although Nova Scotia has reduced its acute care beds by over 30 percent, similar to other jurisdictions, the province's patient days were the third highest in the country while hospital lengths of stay were second highest overall.

With respect to the relative health status of Nova Scotians compared to other provinces, the province has the third lowest life expectancy at birth, as well as the third highest standardized mortality rate. Nova Scotians have the lowest rated comprehensive health status, the highest percentage of population reporting an activity limitation and the second lowest percentage of population reporting excellent self-rated health.

In light of the broad indicators outlined above, Nova Scotia's nursing workforce lacks stability and may be resourced less than optimally.



## ISSUES AND RECOMMENDATIONS

### SETTING THE PLANNING CONTEXT

Over the past five years, Nova Scotia's nursing workforce has exhibited growing signs of instability. Core staffing positions have decreased, casual jobs have remained unfilled, student applicant numbers have declined and increasing numbers of nurses have left the province or the profession. Nurses who have remained in the province are registering increased dissatisfaction with current nurse working conditions and employment opportunities.

If the province is to achieve a stable and sustainable health care delivery system, an immediate and significant investment in Nova Scotia's nursing workforce will be required. First, nursing must be resourced appropriately to ensure that it has the capacity to meet current patient care demands. Second, there needs to be a long-term strategic investment in nursing to strengthen its role and capacity to help re-shape our current health care delivery system into one that employs more nurses more effectively and efficiently, and with greater accountability to meet the future health care needs of the province.

In order to facilitate this shift, appropriate *enabling conditions* will need to be developed which integrate stakeholder responsibility and commitment at the following levels:

*Provincial strategies* - appropriate funding, workforce optimization initiatives, legislation, research, information support systems, and education programs;

*Regional management strategies* - strategies within the Regions and by Non-Designated Organizations, which enhance recruitment and retention strategies, through improved work life conditions, more effective deployment and staff mix;

*Policy and planning* - initiatives that enhance communications, promote partnerships and opportunities for collaborative planning that involve government, the regions, health care institutions and the nursing profession.

A summary of the primary nursing issues that have been identified and the strategic initiatives that are required to address them, along with the recommendations, are set out below.

## **PROVINCIAL STRATEGIES**

To begin to address the issues around nursing in Nova Scotia, government must first identify and promote appropriate *provincial strategies* for change by establishing appropriate funding, workforce optimization initiatives, legislation, research, information support systems and education programs.

### **ISSUE: FUNDING**

Appropriate funding support is the cornerstone for achieving an optimal workforce, enhancing health system stability and for promoting change. An optimal nursing workforce is a key component of an affordable, sustainable and quality health care delivery system.

If we are to move towards achieving a more stable nursing workforce in the short term and towards strengthening the role of nursing in achieving a more efficient health system in the long term, fundamental changes will be required in the way health services are delivered, managed and funded. A revitalized, global health funding platform that promotes flexibility, innovation and accountability through a better integration of all components of the health funding envelope, would be a major catalyst in developing more cost effective delivery options.

This underscores the importance of having a broad, long-term plan for nursing that is supported by strategic initiatives linking both regional and provincial funding levels.

### **Recommendation**

1. **The Department of Health develop, in consultation with nursing and other major stakeholders, innovative funding mechanisms with appropriate incentives, that support the following principles:**
  - a) **the exploration of alternative models of health care delivery;**
  - b) **the establishment of funding envelopes that more closely match the identified needs of the population;**
  - c) **improved access to health services;**

- d) a more efficient and effective use of health care professionals to the full levels of their competency;
- e) broader professional accountability for the quality, outcomes and integration of the care they provide.

## **ISSUE: WORKFORCE OPTIMIZATION**

### **Supply Trends**

Throughout the 1980s and early 1990s there was a consistent growth in the number of registered nurses registered to practice in Nova Scotia. The number peaked in 1993 at 10,067 and then declined steadily through to 1998. For each year between 1993 and 1997, an average of 650 nurses discontinued their registration while an average of 500 new or re-registrants joined the workforce, resulting in an average net loss of 150 nurses per year. The greatest loss was between 1995 and 1996 when there was a difference of 314 nurses registered. Between 1997 and 1998, annual losses appeared to have leveled off with a net loss of only 27 nurses across those registration periods. The total net loss over the 5-year period was 755 nurses, approximately 7.5 percent of the 1993 peak.

Between 1988 and 1998, the mean age of nurses increased from 37.3 to 41.5 years. In 1998, twenty-two percent (1899) nurses employed in nursing in Nova Scotia were 50 years of age or older. Approximately 2,900 nurses will be eligible to retire by 2003. The greatest impact in nurse retirements will be experienced beyond the year 2010.

With the gradual year by year increase in the number of nursing graduates (90 graduates; 210 first-year positions funded in 1998) and with the transition from the two-year diploma to the four-year baccalaureate program in nursing, the net loss in nursing positions may decrease, further reducing the expected impact of the growing number of nurse retirements.

### **Future Supply**

The most significant factor likely to impact on nursing supply in the short-term, is the recent introduction of attractive nursing employment and relocation incentive packages by a number of provinces. In the provinces of British Columbia, Manitoba, Ontario, New Brunswick and Prince Edward Island, over 13,000 new nursing positions have been created. Half of the provinces are currently in contract negotiations with nurses which may further disadvantage Nova Scotia with respect to recruiting nurses as new wage settlements are implemented.

The average age of a nurse in Nova Scotia was 41.5 in 1998, up from 37.3 ten years earlier. In 1998 almost 1900 nurses (22 percent of the workforce) were 50 years or older. By the year 2003, almost 2,900 nurses will be eligible for retirement. It is estimated that, even at current nursing enrollment levels, nurse retirements may not be a problem if Nova Scotia is able to improve its overall recruitment and retention of nurses by only 15 percent. By the later part of the next decade however, nurse retirements will begin to pose a significant threat to optimal nurse supply levels.

Nova Scotia will need to offer more full-time employment positions as soon as practicable if it is to remain competitive with the current recruitment strategies in other jurisdictions. If such a policy is adopted, it is estimated that Nova Scotia could recruit up to 300 nurses back to Nova Scotia and improve its retention of nurses (including new graduates) up to 30 percent annually.

Alternatively, if an Active Employment Policy is not adopted, it is likely that the number of nurses leaving Nova Scotia will increase by at least 30 percent.

### **Demand Trends**

Determining the optimal number of nurses required in Nova Scotia, in view of the lack of universally accepted standards and the paucity of appropriate and reliable data, is a challenging task. While, ideally, demand estimates for nurses should be linked directly to population health care needs (i.e. needs-based planning), the utilization of health care services is the most common method used to estimate demand. While it is recognized that this approach tends to perpetuate *status quo* utilization patterns and has no capacity to identify any unmet demand, it is a useful baseline proxy for demand until better data becomes available. It follows then that the number of funded nursing positions created to sustain that level of utilization (number of nurses employed) becomes an indicator of nursing demand. Given changing deployment patterns, nursing full-time equivalent data would be required to accurately track changing nursing service utilization patterns. However, historical data in this regard is currently not available.

The number of nurses employed in Nova Scotia dropped from 9325 in 1993 to 8739 in 1998, a drop of 6.3 percent overall. By comparison, the number of regular full-time positions decreased from 5435 in 1993 to 4644 in 1998, a decrease of 791 or 14.6 percent. Over the same five-year period, there has been a gradual increase in the number of Registered Nurses employed in both casual full-time and casual part-time positions. Total casual positions increased from 1861 to 2024, an increase of 163 or 8.8 percent. The number of regular part-time positions fluctuated since 1993, with a general increase over the past three years.

But this traditional approach of assuming that the number of approved, funded nursing positions is an accurate reflection of the optimal levels of nursing care that are required, is inadequate and misleading. The adequacy of our current nursing numbers

may require closer scrutiny when we consider the province's relatively high population of physicians, high patient days and acute care lengths of stay, as well as our low rating with respect to nurse-to-physician ratio, life expectancy from birth, percentage of population reporting excellent self-rated health and overall health status.

A provincial *Nurse Utilization Survey* was recently conducted by the Department of Health in attempts to review current nursing baseline budgets and staffing levels in light of overall actual nursing expenditures. Where reported, overtime, call back and purchased hours constituted about 2 to 3 percent of total nursing budgets. Two Health Regions reported that the total number of full-time equivalent nurses that they employed exceeded their total nursing budgets by over 7 percent. The survey also indicated that the RN to LPN ratio of 60:40 often targeted in health care institutions a decade earlier, now averaged 90:10 in Central Region hospitals and 76:24 for the other Regions. The increase in demand for RNs is reflective of increased patient acuity in hospitals.

A recent *Report by the Senior Nurse Administrators* representing all regions of the province has attempted to assess the adequacy of current provincial staffing levels and the number of nurses required to sustain the current level of patient care. Each of the Regional Health Boards and NDOs, Long Term Care and Home Care sectors reviewed their core nursing position requirements for 1999-2000 by considering care requirements of patients serviced by their respective sectors, the predicted volumes and workloads, skill mix of staff, casual hours used, the availability of casual nurses for work and current overtime and call-back trends.

A need for 492.6 full-time equivalent RNs was identified (including 20 in Home Care) at an estimated cost of \$25.6 million. In addition, between 200 and 400 LPNs may be required (93 percent in the Long Term Care sector) at an additional cost of about \$14 million for a grand total of \$40 million.

### **Future Demand**

In their report *Forecasting the Demand for Nurses*, the Population Health Research Unit and the School of Nursing at Dalhousie University identified a number of factors which affect the demand for nursing services: demographic factors, population health status, funding, health system structure, treatment modalities, consumer health practices, nursing roles, working conditions, nurse utilization, nurse requirements and the relative impact of nursing hours and utilization on full-time requirements.

The project estimated the number of hospital days of care per capita used by specific age/gender groups and then applied those utilization rates to the projected population to estimate the number of days of care that would be required in the future. Estimates of the number of nursing hours delivered per day-of-care were then applied to the



projected days of care to estimate the number of additional nursing hours that would be required.

It is forecast that Nova Scotia may need an additional 136 (about 95 FTE's) nurses per year over the next seven years (for a total of 954 nurses or 665 FTE's) to meet the anticipated growth in future demand. If this figure is added to the revised current nurse core staffing level recommended by the senior nurse administrators (705 nurses or 493 FTE's), a grand total of almost 1,650 nurses (1,158 FTE's) may be required over the next seven years.

### **Recommendations**

- 2. Stabilize the nursing workforce by funding 1999/2000 nursing staff resources based on actual nursing utilization for 1998/99, as determined by key stakeholders.**
- 3. Re-examine, as a research and planning priority, the future demand for nurses, as a function of the aging population within the context of a health professional workforce that will be re-tooled to more effectively meet the province's future requirements.**

### **ISSUE: LEGISLATION AND REGULATION**

Health professional regulation is created with the primary aim of providing protection to the public. Legislation establishes roles for health professionals that are consistent with their identified competency levels. In order to promote efficiency, quality and consumer choice of services and providers, legislation needs to permit flexibility. Registered Nurses are self-governing and appropriate scopes and standards of practice have been established by legislation where the profession has been given the authority to enforce them. In 1997, the Registered Nurses Act updated the nursing scope of practice statement giving nurses the capacity, within the meaning of the Act and consistent with their competency levels, to undertake a broader range of primary care, health promotion and disease prevention activities.

If these activities are considered medical acts, as provided for in the Medical Act, their provision would be restricted to licensed medical practitioners and would be prohibited activities for nurses. The existing Medical Act contains provisions for the delegation of medical acts which may be the preferred short-term option for conducting, for example, primary care pilot projects involving Nurse Practitioners or other expanded roles for nurses. Legislative amendments may be needed in the longer term to maximize the benefits that may be realized through expanded roles for nurses.

The existing legislation for LPNs does not contain a scope of practice statement and the scope of practice statement in the regulations is vague. The Licensed Practical Nurses Act would benefit from being updated and proposed amendments submitted by their Association are now under consideration by government. Focus group participants felt that the legislation governing staff mix in long-term care facilities, in particular, must also be addressed as soon as possible.

Refer to Appendix R for further details.

### **Recommendations**

4. Pending supporting recommendations from Nova Scotia's Primary Care Projects, amend the *Registered Nurses Act* and associated regulations, as required, to provide for the regulation of Nurse Practitioners in Nova Scotia.
5. Amend the *Licensed Practical Nurses Act*, to provide for improved regulation of practical nursing in Nova Scotia.
6. Amend the *Homes for Special Care Act* to provide for improved regulation of the Personal Care Worker.

### **ISSUE: RESEARCH**

The promotion of nursing research is key to advancing nursing practice, evaluating the role of nursing in alternative models of care and promoting evidence-based practice. It can also provide insight into options available with regard to the appropriateness of changing roles and levels of competency in the areas of Home Care, Long Term Care, health promotion and disease prevention. Patient satisfaction and health outcomes in relation to advanced practice nursing in the areas of primary care are also key nursing areas requiring more in-depth analysis.

At the national level, the federal government recently granted \$25 million to the National Institute of Health Research, in its 1999-2000 budget, to promote nursing research initiatives. In addition, Nova Scotia, with federal government funding assistance, is currently launching several Primary Care Pilot Projects throughout the province that will include the evaluation of expanded role/advanced practice nursing service delivery alternatives.



## **Recommendations**

- 7. Explore and evaluate research in the areas inter-disciplinary education and employment to enhance workforce efficiency and flexibility.**
- 8. Support integrated and collaborative approaches to nursing research at provincial, regional and national levels.**

## **ISSUE: HEALTH MANAGEMENT INFORMATION SYSTEMS**

Planning for health human resources has been identified as a priority for the province of Nova Scotia. Historically, such planning has been characterized as reactive rather than proactive, in part, because the reliable, consistent and coordinated human resources information which is required to support long and short-term human resources planning decisions, has not been available in an integrated, timely and useful manner.

The Nursing Workload Measurement System (NWMS), designed as a decision-making tool to document relevant data (staffing, scheduling and budgeting), was intended to assist administrators in making appropriate resource allocation decisions. However, the research is reporting a significant discrepancy between the intended and actual use of the NWMS.

The research clearly articulates the inability of the current NWMS to capture the complexity of nursing work. Many of the tasks, functions, and activities of the nurse are invisible or hidden in nature and cannot be accurately measured using the current methods. There are additional challenges reported due to the lack of standardization (reliability and validity) with the NWMS in Nova Scotia. Specifically, these are the lack of interface technology between the NWMS and the hospital systems, as well as challenges associated with automating the NWMS to a single vendor.

The lack of system flexibility poses additional dilemmas. Focus group participants expressed frustrations that current systems have been used to predict workload but not to address or reflect today's complex health care environment. Participants feel there is a risk if organizations rely solely on numbers and ignore the onsite expertise and intuition (of all levels of staff) available. Further, participants suggested that quality dimensions, other than efficiency, would be valuable to measure (e.g. appropriateness of care). Finally, there was a great deal of concern expressed by many stakeholders regarding the overall integrity of the system.

Thus, in order to support future health human resources decisions, a broad-based information system encompassing all these components which will, in effect, be the foundation of such planning decisions, must be developed.

Refer to Appendices K and S for further details.

### **Recommendations**

9. In cooperation with the RNANS and the Practical Nurses Licensing Board, enhance the DOH nursing database through the addition of information to annual registration forms about nursing qualifications, employment patterns and places of employment within and outside the province.
10. Develop and maintain, in consultation with health care institutions/agencies, a process to collect consistent data to facilitate short and long-term nursing human resource planning and a mechanism for reporting information from relevant government departments and agencies.
11. In collaboration with stakeholders, articulate a provincial strategy for a management information system which will: reflect the data needs of users; ensure user commitment; provide for collection of comprehensive data on health care status, nursing interventions and client outcomes; and will be appropriately resourced for ongoing development and maintenance.
12. Create an advisory group representing all health sectors to determine the common elements required to meet nursing's basic information needs.

### **ISSUE: EDUCATION**

#### **Entry Level Education - Registered Nurses**

Since the closure of six diploma schools in Nova Scotia, the number of new graduates has dipped by 57% from a high of 333 (1990) to 143 (1999). Although university enrollments were expanded in 1995 simultaneously with the diploma program closure, the first graduates will not be until 1999. As a result, from 1996 to 1998, Nova Scotia produced, on average, only 76 graduates per year. The Department of Health funding for university enrollment expansion was rolled back by 40% in 1996 due to anticipated downsizing of the health system.

The decline in enrollment to universities has been exacerbated by a notable increase in the numbers of new graduates who chose to leave Nova Scotia. Rural areas report significant difficulties in recruiting new graduates. The Continuing Care sector has identified ongoing challenges related to attracting and retaining new graduates.

An adequate supply of new graduates must be produced to meet the demand for nursing resources now and in the future. Several factors are contributing to a decline in

the appeal of nursing as a career. As a result, universities are increasingly challenged to attract and retain qualified applicants to meet enrollment targets. The enrollment shifts, too rapid phasing in of the 4-year baccalaureate program and inability of some sectors to fill enrollments, have all contributed to a decline in graduate numbers.

### **Recommendation**

- 13. Fund an enrollment expansion of 70 learners to Dalhousie University and St. Francis Xavier University to increase the total seat capacity from 210 to 280. Establish a satellite campus of St. Francis Xavier in the Cape Breton Region.**

### **Entry Level Education - Licensed Practical Nurses**

In 1992, there were six community college programs which prepared approximately 202 licensed practical nurses (LPNs) per year. By 1997, two college campuses had been closed resulting in a 35% (132) reduction in graduates. Enrollment reductions were implemented because of a reported high incidence of under-employment (LPNs working as personal care workers) and unemployment of LPNs. This employment pattern has persisted and continues to be a major concern for new graduates who are seeking employment.

There appear to be regional differences in the supply/demand ratios for LPNs in Nova Scotia. The province as a whole trains more than sufficient numbers of new LPN graduates, but due to regional shortages, a program is under consideration for the Springhill area and a new part-time program for 20 learners is scheduled for Truro for 1999.

Based on this project's demand projections for LPNs, it is likely that the college enrollments will contribute to a continued over production of LPNs.

### **Recommendation**

- 14. Define enrollment targets and priority program locations to meet the projected demand for LPNs, to ensure the system does not continue to build an oversupply.**

## **Entry Level Programming - Registered Nurses and Licensed Practical Nurses**

Consultation with key stakeholders indicated recurring themes regarding possible inconsistencies between the expectations of nursing practice and nursing education programs at both the community college and university levels. Practicing nurses and educators reported the need for immediate, improved, consultation and collaboration between the RN and LPN programs regarding the education needs of nurses. Of particular concern was the reported lack of agreement and/or consultation between education programs and the practice environments on the clinical course requirements of RN and LPN learners.

Learning environments provided in the nursing practice settings within many health sectors are reportedly not optimal environments for student learning. Staff nurses perceive their teaching roles as preceptors/mentors for nursing students as undervalued and lacking clarity or validation. Students perceive nurse preceptors as overworked and frustrated. Employers report preceptorships as an essential strategy to support the education of students and practicing nurses, a strategy which is, however, unrecognized and unfunded in the budget process.

### **Recommendation**

- 15. Establish formal processes and systems to promote dialogue and collaborative evaluation with regard to education programs and graduate competence.**

### **Continuing Education**

#### ***Professional Specialty Education***

The demand for nursing education by registered nurses to support clinical competence in a broad spectrum of nursing specialties and advanced practice roles has increased significantly in recent years. Advances in technology, medical specialization and general increases in patient acuity have signaled the need for highly competent clinicians and education programs to support these practice requirements.

Currently the Department of Health funds certificate programs for registered nurses in critical care, perioperative, psychiatric/mental health and perinatal nursing. These programs are delivered by health care agencies either independently or in partnership with the university. The demand for these programs has remained relatively stable until 1999 at which time the QEII and Dartmouth General reported acute shortages in critical care nursing. Budget plans for expansion of specialty programs in critical care, perioperative and emergency nursing are currently being drafted by the QEII. The Perinatal Education Project at the IWK Grace has similarly defined the need for

increased funding to support continuing professional education for perinatal nurses. As well, there are studies suggesting a critical need for programs to support gerontology and oncology nursing.

The issue of providing post-entry level education for registered nurses in specific specialty areas has been a source of concern for more than a decade. Access issues related to funding and geographic disparity continue to challenge the system. Numerous studies have been commissioned by the Department of Health to address the issues of specialty education for nurses. The reports consistently call for new education systems which ensure relevant, accessible, and cost effective education for registered nurses in all regions, one which ultimately supports improved health outcomes for all Nova Scotians.

### **Recommendation**

- 16. Establish a mechanism to ensure accountable, cooperative, coordinated, needs-based specialty education which optimizes resources.**

### ***Orientation and Ongoing Staff Development***

Lack of resources and access to orientation and ongoing staff development programs are long standing concerns for front line nurses. Restructuring, downsizing and increased patient acuity have reportedly exacerbated the problem. The limited education opportunities which are currently available are primarily reserved for RNs. LPNs report virtually no support or funding for continuing education activities to support their practice requirements.

As the health system becomes more and more complex the need for accessible funding and organizational support for a wide range of nursing education opportunities will be essential. The system expects recent graduates and newly hired experienced nurses to commence their roles as relatively independent autonomous practitioners with minimal or no time for orientation and integration to the workplace. Nurses at all levels are concerned about their capacity to adequately address their patient needs and meet employers expectations with these limited opportunities for development.

Prior to 1993, \$1.5 million in funding was provided for continuing education for nurses. As this money was removed, the Regions and NDOs were challenged to find the resources required to support the education requirements of nurses. This situation has occurred at a time when restructuring, downsizing and patient acuity levels (in all sectors) are accelerating the demand for a well-qualified, flexible, clinically competent nursing workforce.



Recognizing the education concerns related to access and regional disparity the RNANS and Department of Health have collaborated on the implementation of continuing nursing education through the Telehealth Program. Currently, the program supports education in the Eastern and Western regions and targets the registered nurse. Programs are not currently designed to address the education requirements of LPNs.

Refer to Appendix F for further details.

### **Recommendations**

- 17. Develop a mechanism for base nursing budgeting which provides for mandatory orientation, mandatory competence development and continuing professional development.**
- 18. Enhance the availability of Telehealth for nursing education at all levels and all regions.**

## **REGIONAL MANAGEMENT STRATEGIES**

With provincial strategies in place to stabilize the nursing workforce, appropriate *management strategies* need to be developed, within the Regions and by NDOs, which enhance recruitment and retention strategies, through improved work life conditions and more effective deployment and staff mix.

### **ISSUE: UTILIZATION AND DEPLOYMENT**

Casualization has been identified by nurses as a primary cause of dissatisfaction with nursing work life and the root cause of the current instability of the nursing workforce.

In Nova Scotia the RNs percentage of casual nurses has increased from 20 percent of the workforce in 1993 to 23.1 percent in 1998. Over 1300 of Nova Scotia's 2,000 casual nurses are employed in hospitals. In some sectors, Home Care for example, casualization rates have reached 50 percent. In the Medical/Surgical sector, which represents almost one-quarter of all employed nurses, 28.5 percent of nurses are employed on a casual basis.

While the number of casual nurses increased by 400 between 1993 and 1998, the number of regular full-time nursing positions declined by over 700. Similarly, the number of part-time and casual LPNs are currently represent 55 percent of the total employed.

Compared to 1993, graduates in 1998 are less able to find full-time employment up to one year following graduation. Five years after graduation, over half are still employed in casual positions (RNANS, 1998). The majority of nursing students indicate that they will leave Nova Scotia in order to find full-time employment.

Casual employment is viewed as unfair by most nurses. They cite ill-defined roles, unstable work schedules and income, and unsafe environment for patients in terms of continuity and quality of care. Inadequate core staffing, and limited availability of casual nurses, has resulted in increased overtime and call-back hours, a high degree of stress and inability to provide quality care due to increasingly heavy workloads. While 25 per cent of all casuals work at two or more jobs, still others are under-utilized. Preliminary results from a provincial nursing utilization survey suggest that most casuals work less than one-half of a full-time equivalent (FTE). This would suggest that Nova Scotia may have the capacity to create over 300 full-time equivalent positions by more fully utilizing its casual workforce if funding was available.



Recent contract negotiations have offered improved work life conditions for some sectors of casual workers but not for others. The staffing processes established as a result of some collective agreements may limit opportunities for new graduates and increase difficulties in recruitment of experienced nurses (e.g. internal seniority rights).

Refer to Appendix I for further details.

### **Recommendations**

19. **Significantly reduce the number of nurses in casual positions, while ensuring that the need for contingency staffing is met.**
20. **Create better working conditions for those nurses who work in casual positions by providing appropriate orientation, regular hours, employment benefits and wait-listing for full-time employment.**

### **ISSUE: RECRUITMENT AND RETENTION**

There are a number of complex factors which have been contributing to the threat of a pending nursing shortage in Nova Scotia. Internal influences such as health care reform and hospital restructuring, work life issues, and deployment concerns are currently interacting with external influences such as demographic shifts (aging population), decreasing supply of nurses, increasing out-migration of nurses, and declining enrolment in nursing education programs. This has resulted in the emergence of a complex, ill-defined issue. Whether or not the current gap between supply and demand for nurses (RNs, LPNs) is due to a supply shortage, ineffective deployment, or insufficient surplus, it is clear recruitment and retention strategies are critical components in successfully addressing the issues.

In Nova Scotia, between 1993 and 1998 the number of RNs employed in nursing declined by 6.6% (approximately 600 nurses) compared to a national decrease of 3.4% (CIHI, 1999). During the same period the number of casual registered nurses has increased from 20% to 23% of the RN workforce. This trend of decreasing full-time positions while at the same time increasing casual positions, is considered by many throughout the province as being primarily responsible for the current inability to recruit, re-recruit, and retain nurses. This situation has been further exacerbated by the promise of full-time employment and, in some cases, rich incentive packages recently offered by other provinces and the United States. In addition, consultations with key stakeholders revealed that systemic factors or environmental issues such as: workload, remuneration, lack of continuing education opportunities, and lack of decision-making opportunities within the workplace must be addressed to retain nurses over the long

term. Furthermore, nurses are concerned how these issues will impact continuity and quality of patient care over time.

Finally, recruitment and retention continues to be problematic in both the Long Term Care and Home Care sectors, despite the recent efforts to improve wages. These sectors are challenged to manage the high incidence of staff (RN and LPN) vacancies, increased patient acuity, and the under-employment of LPNs. The fact that many of these vital services are often delivered in remote and rural communities only compounds the difficulties in recruitment and retention.

Research reveals that while recruitment is a critical component, it is the development of successful retention strategies which will both stabilize the current workforce and improve the future nursing supply. Furthermore, the literature suggests that, while there is no single model or formula which results in effective recruitment and retention of nurses, individual site-specific strategies can be implemented at all levels. The most successful recruitment and retention strategies offer both intangible and environmental benefits which are specifically designed to improve job satisfaction. These strategies would involve introducing such initiatives as the following: creating an autonomous practice environment through increased participation in decision making; shift-rotation and scheduling flexibility; staff communication; continuing education opportunities; nursing leadership and management support. Furthermore, proper orientation and mentor programs, particularly for new graduates, are essential. It is critical that strategies are developed and implemented which will both stabilize the current workforce (retention) while enlarging and expanding the current pool of applicants (recruitment).

Refer to Appendix G for further details.

### **Recommendations**

The following planning principles are the basis of the recommendation below:

- planning must be comprehensive and include all key stakeholders;
  - there must be simultaneous implementation of both short-term (*immediately addressing the most critical issues*) and long-term (to ensure a stable and sustainable workforce in the long term) strategies;
  - strategies must be designed to reduce the competition between RHBs and NDOs for the same employee.
- 21. Develop strategies to improve work life, including professional and structured opportunities for nurses to participate in patient care decision making at both the corporate and operational levels.**

- 22. Fund a comprehensive marketing, communication and recruitment plan for the nursing profession.**

### **ISSUE: STAFF MIX**

Staff mix models are intended to be an element of health human resource planning where the overall goal is to attain the most effective, flexible, and cost-effective use of health care personnel. Four key areas identified in the literature as significantly impacted by the implementation of staff mix models were 1) quality of patient care 2) role enhancement and job satisfaction 3) delegation and liability and 4) health care costs.

It is unclear whether these key areas will be positively or negatively impacted by staff mix. It depends on the health sector, on the acuity of the patients, on the training and expertise of the staff, and on the intended staff mix configuration. The lack of long-term study and statistical evidence leave many questions unanswered as to the efficacy of staff mix.

Nova Scotia nurses are primarily concerned that inappropriate staffing strategies, perceived as being initiated by cost constraint, are fragmenting service delivery. Further, they feel strongly that patient care requirements, determined from a holistic perspective, must be the primary factor in deciding how resources are allocated.

Refer to Appendix E for further details.

### **Recommendation**

- 23. Initiate further research into staff mix models with respect to future job design, educational requirements, workload implications, quality of work life and standards of practice and the evaluation of staffing pilot projects.**

## POLICY AND PLANNING

Finally, *policy and planning* initiatives are essential to guide the process of decision making around nursing human resources. Those initiatives should enhance communications, promote partnerships and opportunities for collaborative planning among government, the regions, health care institutions and the nursing profession.

### ISSUE: NURSING HUMAN RESOURCES PLANNING AND IMPLEMENTATION STRATEGIES

#### Long Term

With nurses representing almost 30 percent of the cost of the health care system, the goal of achieving an optimal nursing workforce remains a high priority for Nova Scotia.

At the present time the Provincial Leadership Committee (PLC) Working Group on Health Human Resources Planning is responsible for developing a human resources master plan for the province. Given that there are almost eighty health professions and disciplines in the province, however, no health professions are officially represented at this planning table. At this point in time, no formal sub-committee or working group has been established to represent the interests of the nursing profession or any other health professional groups.

Existing nursing planning groups and topic-specific *ad hoc* nursing focus group sessions have been explored as a practical link to the profession. The Patient Care Leadership Group, composed of senior nurse administrators, has established an informal link with the PLC. The Department of Health's Senior Nurse Advisor (Education) has provided a formal link between the Patient Care Leadership Group and the current Working Group on Human Resources Planning on an ongoing basis. These relationships, although viable, lack consistency and clear accountability.

In view of the broad scope of the recommendations of this report and the need to formalize the nursing policy link to health human resources planning activities on an ongoing basis, over the longer term, suggests that a new forum may be required.

#### Short Term

In order to ensure that continuity and momentum is maintained on the nursing human resource planning issue, an action strategy will need to be developed as an immediate priority to implement key recommendations.

Once the report has been received by government and a direction has been set, it will be important that recommendations are implemented equitably, that priorities are set collaboratively, that funding is timely, that co-dependent recommendations are staged and coordinated appropriately and that individual responsibilities and authorities and accountabilities are defined.

Successful implementation will require that inter-regional competition be minimized and collaboration and cooperation be maximized, recognizing that the main guiding principle will be to enhance the overall stability of nursing workforce.

### **Recommendations**

- 24. Develop standards, monitoring and evaluation systems to inform policy direction and ensure a coordinated, integrated provincial nursing human resources planning process.**
- 25. Implement a nursing human resources consultation process that integrates all health care sectors.**
- 26. Establish a mechanism to ensure implementation of the approved recommendations.**



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## **APPENDICES**



**Appendix A**

**Working Group on  
Health Human Resources Planning**

## **WORKING GROUP ON HEALTH HUMAN RESOURCES PLANNING**

Linda Judge, Co-Chair	Director, Education, Planning & Quality Nova Scotia Hospital
Rick Cameron, Co-Chair	Director, Health Human Resources Planning Nova Scotia Department of Health
Harold Dunstan	Director, Human Resources Nova Scotia Department of Health
Betty Mattson	Program Manager, Nursing Eastern King's Memorial
Bonita LeBlanc	Central Region Health Board
Carrie MacIsaac	Director, Human Resources St. Martha's Regional Hospital
Gary Earles	Director of Human Resources Colchester Regional Hospital
Neil MacEachern	Director, Human Resources Cape Breton Healthcare Complex
Meg McCallum	Director, Learning & Organizational Development IWK Grace Health Centre
Pam Reid	Nursing Advisor to the Deputy Minister Nova Scotia Department of Health
Elizabeth Ann Macdonald	Policy Advisor Nova Scotia Council on Higher Education
Caryll Tawse	Executive Director VON Halifax Branch
Mary Jurcina-Taylor	Administrator Milford Haven
Brian Taylor	Manager of Physician Resources Nova Scotia Department of Health
Phillip Veinotte	Director, Human Resources NS Association of Health Organizations

**Appendix B**

**Health Human Resources Planning Unit**

## HEALTH HUMAN RESOURCE PLANNING UNIT

Rick Cameron	Director
Ron Noseworthy	Senior Advisor (11/97-09/98)
Susan Anderson	Policy Analyst (01/98-03/99)
Pam Jones	Research Officer
Sharon Flynn	Secretary (08/98-05/99)
Ellen Hillman	Secretary (10/97-05/98)
Margot Parent	Policy Analyst (04/99-05/99)
Pam Reid	Nursing Advisor to the Deputy Minister (07/98-07/99)

## **Appendix C**

### **Supply of Registered Nurses and Licensed Practical Nurses in Nova Scotia**



## NURSING SUPPLY

Analysis of Nova Scotia's nursing supply is based on the Health Human Resources Planning (HHRP) database which was compiled from registration data from the Registered Nurses Association of Nova Scotia (RNANS) and the Practical Nurses Licensing Board. This report includes a description of nursing supply trends from 1988 to 1998, with emphasis on the period since 1993 when the decline in nursing supply begins. Select trends are represented graphically throughout the text, with complete data tables provided at the end.

### Registered Nurses

Throughout the 1980s and early 1990s, there was consistent growth in the number of Registered Nurses (RNs) registered to practice in Nova Scotia (Figure 1, Table 1). The number peaked in 1993 at 10,067 and then decreased steadily to 9312 by 1998. For each year between 1993 and 1997, an average of 650 RNs discontinued their registration while an average of 500 new or re-registrants joined the workforce, resulting in an average annual net loss of 150 RNs (Table 2). The greatest loss was between 1995 and 1996 when there was a difference of 314 RNs registered. By 1997 and 1998, annual losses appear to have leveled off with a net loss of only 27 RNs across those registration periods. The total net loss over the five-year period (1993-1998) was 755 RNs, approximately 7.5% of the 1993 peak.

Figure 1



## *Registered Nurse Employment Trends*

The number of RNs registered to practice in Nova Scotia from 1988 to 1998 is reflective of the numbers employed in nursing over that period. Similar to the registration numbers, the number of RNs employed in nursing in Nova Scotia peaked in 1993 at 9325 but had decreased to 8,739 by 1998, an overall net loss of 586 (6.3%) nurses (Figure 1, Table 1). The bulk of those (433) were lost between 1994 and 1996 as a result of the restructuring of the Nova Scotia Health Care System. In addition to the decline in numbers from 1993 to 1998, there have been changes in the distribution of nurses within the health care system.

Geographically, most RNs in Nova Scotia are employed in the Central Health Region, which includes three of the province's four Non-Designated Organizations (NDOs). While there has been a general decrease in the number of RNs employed in nursing from 1993 to 1998, the proportion of total nurses employed in each region has remained relatively constant (Table 3).

As might be expected, the majority of RNs are employed in hospitals, but there have been changes in the distribution among the various types of institutions from 1993 to 1998. As shown in Figure 2, the most significant changes in place of employment have been the decrease in the number of RNs working in hospitals and mental health centres and the increase in the number working in nursing homes and community health agencies (Table 4). There was little difference in the percentage of RNs employed in each type of position between 1993 and 1998, the majority being employed as staff nurses (Figure 3, Table 5).

As for their primary area of responsibility, most were employed in the medical/surgical area, followed by geriatric and critical care (Table 6). There were few differences in the percentages of RNs employed in each of the areas of responsibility between 1993 and 1998, with the exceptions of a decrease in the overall percentage employed in medical/surgical and the increase in the overall percentage employed in geriatric nursing (Figure 4). Oncology and rehabilitation were added as categories of nursing care between the two registration points.

**Figure 2**

## **RNs Employed in Nursing in Nova Scotia Institution Type by Year (1993 & 1998)**

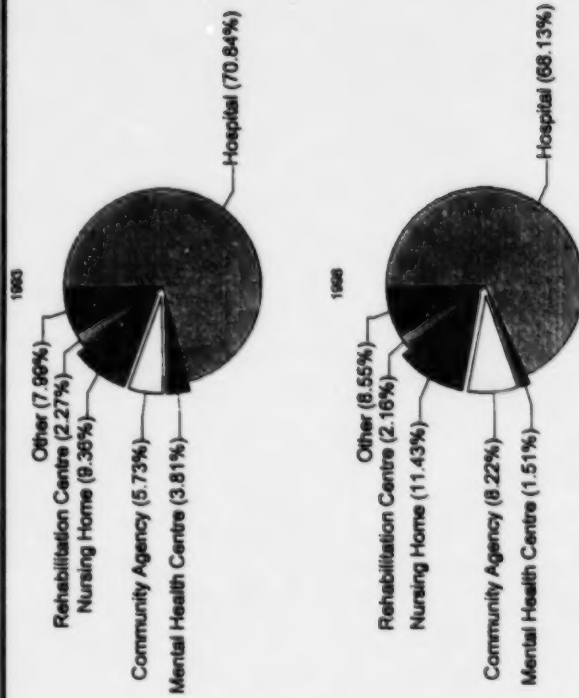


Figure 3

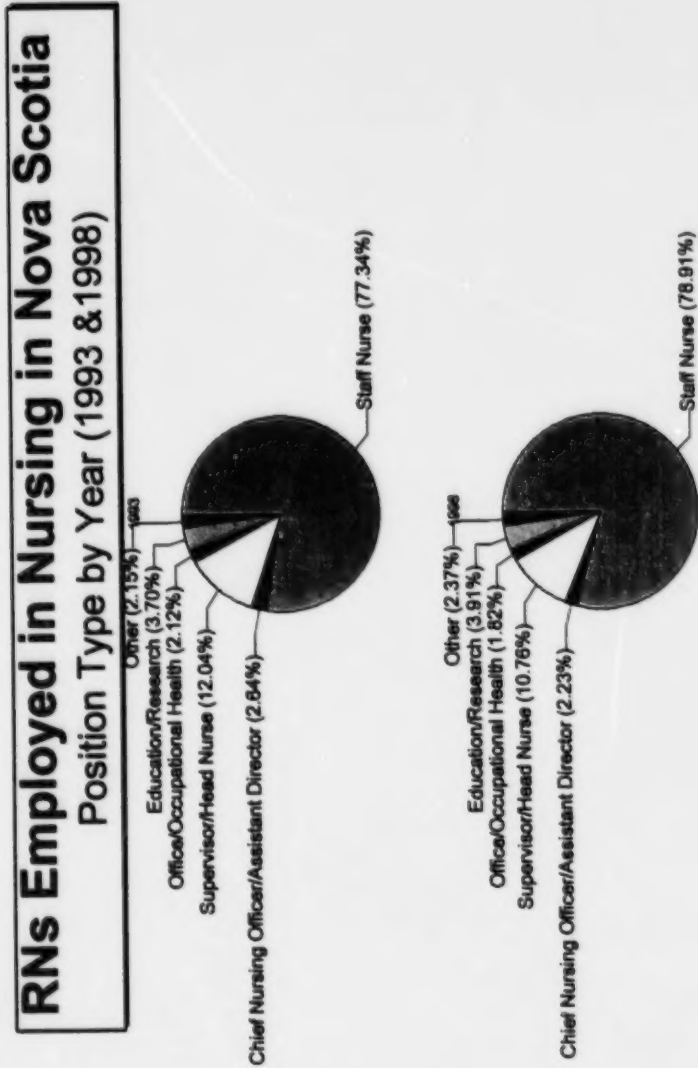
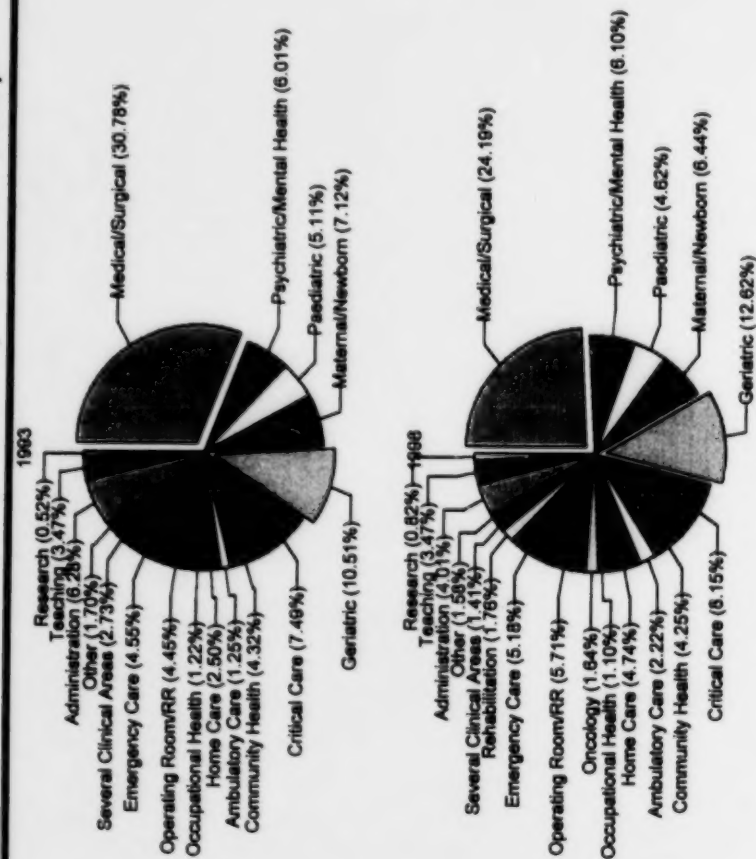


Figure 4

## RNs Employed in Nursing in Nova Scotia Responsibility by Year (1993 & 1998)

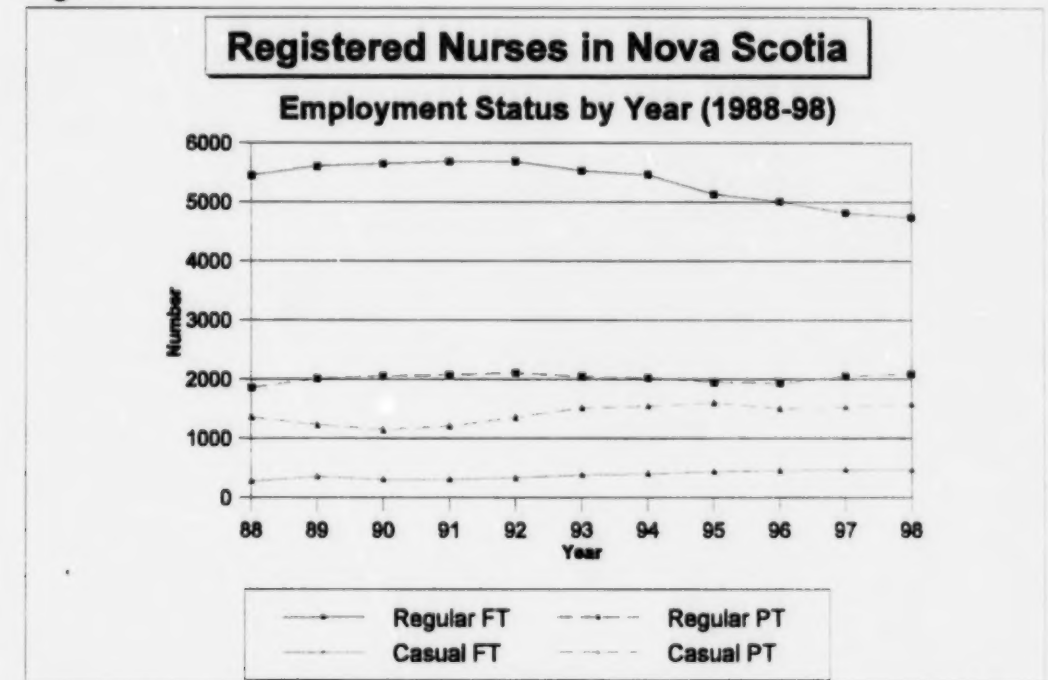


5

## Employment Status

Corresponding to the overall decrease in the number of RNs employed in nursing, there has been a proportionately greater decrease in the number of RNs employed in regular full-time positions (Figure 5, Table 7). The number of regular full-time RNs decreased from 5435 in 1993 to 4644 in 1998, a decrease of 791 or 14.6% (compared to the 6.3% decrease in RNs overall). Over the same five-year period, there was a gradual increase in the number of RNs employed in both casual full-time and casual part-time positions. Combined, casual positions increased from 1861 to 2024, an increase of 163 or 8.8%. As shown in Figure 6, casual employment is making up a continuously larger proportion of RNs employed in nursing. The number of regular part-time positions fluctuated somewhat since 1993, with a general increase in the past three years.

Figure 5

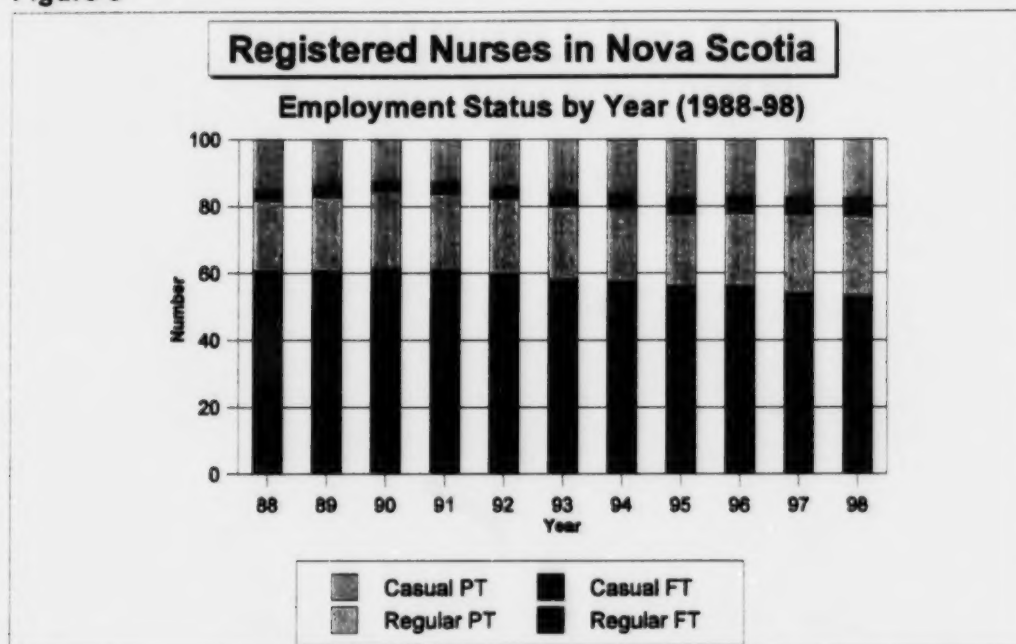


In 1998, approximately 23% of employed RNs in Nova Scotia were employed on a casual full- or part-time basis. Tables 8-11 provide a breakdown of the employment status of RNs within specific areas of nursing and with particular characteristics. As shown in Table 8, casual employment of RNs was more prevalent in certain types of health care institutions. In home care agencies, for example, 50% were employed in casual positions. There were also regional differences in casual employment -- 27% in the Eastern Region compared to 21% in the Central Region (Table 11). The actual



number of casual positions is considerably under-represented by counting the number of RNs employed in those positions, since 24.7% of casual RNs indicated that they had more than one employer in 1998.

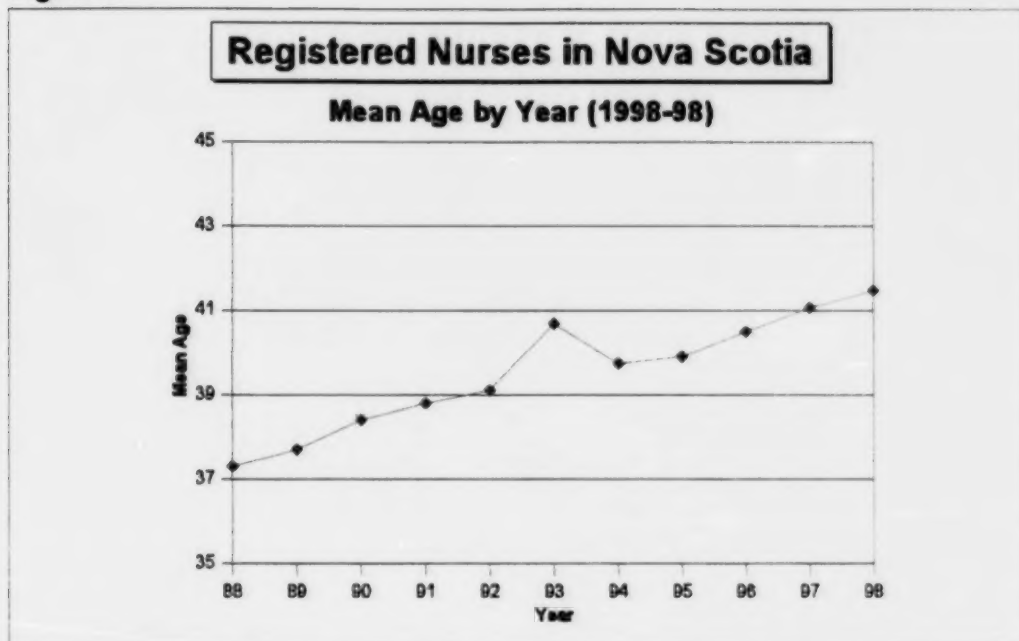
**Figure 6**



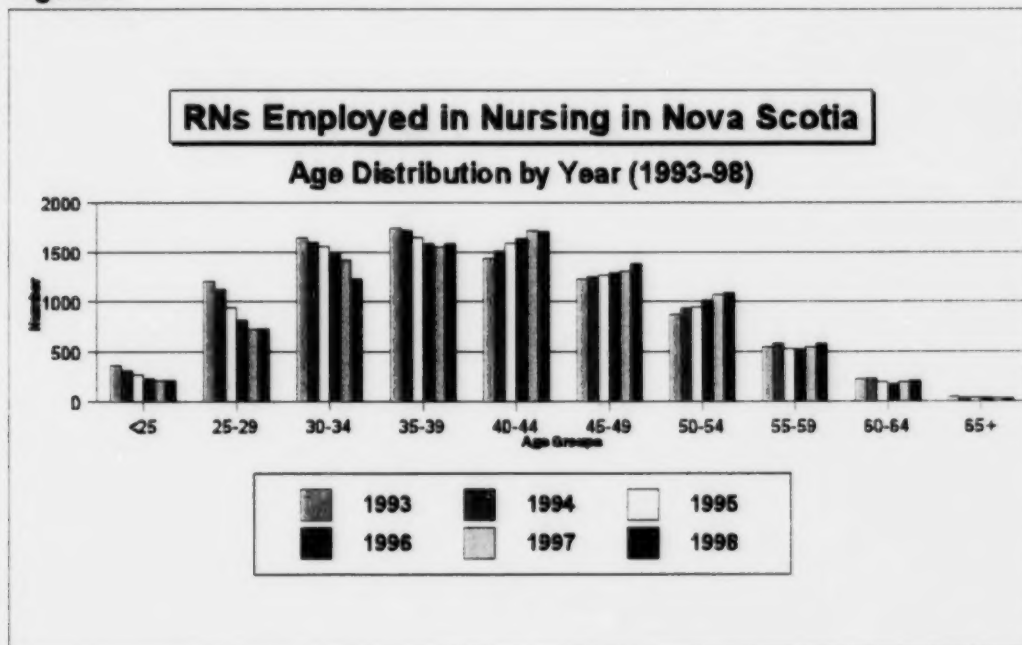
### *Aging Nursing Workforce*

The mean age of RNs in Nova Scotia has increased steadily over the past decade (37.3 years in 1988 to 41.5 in 1998)(Table 12, Figure 7). As shown in Tables 13 and 14, those RNs whose initial nursing education was a Bachelor's degree and those employed in casual positions are, on average, considerably younger. RNs employed in the Central Health Region are also slightly younger than in each of the other three regions (Table 15). Mean ages also vary by area of nursing. In 1998, for example, the mean age of RNs employed in educational institutions and in occupational health was 46.7 and 46.2, respectively, compared to the overall mean of 41.5 (Table 16). At a mean age of 40.4 years, staff nurses are generally younger than RNs in all other position types (Table 17), as are RNs who work in medical/surgical, paediatric, oncology and maternal/newborn areas of responsibility (Table 18). As shown in Figure 8, since 1993 alone, there has been an overall decrease in the number of RNs in the younger age groups and an increase in the number in older age groups. Between 1993 and 1998, the number of RNs over the age of 50 increased by 13% while the number under the age of 30 decreased by 40.1%. In 1998, 1899 (22%) of RNs employed in nursing in Nova Scotia were 50 years of age or older.

**Figure 7**



**Figure 8**



Approximately 2867 RNs who were registered to practice nursing in 1998 will be eligible to retire by 2003 (within five years of the registration period)<sup>1</sup>. Based on past retirement trends, the likely number of retirements by 2003 is 826. Based on the difference in mean ages cited earlier, the affects of pending retirements are a more serious issue in certain areas of nursing.

### *Registered Nurse Education*

Over the past several years, there has been a general decrease in the number of diploma educated RNs and a general increase in the number whose initial education is a Bachelor's degree (Table 19). While the number of diploma prepared RNs still greatly outnumbers the number of RNs with Bachelor's degrees, 779 of those employed in 1998 whose initial education was a diploma have since completed a Bachelor's degree and a further 82 had gone on to complete a Master's or Doctorate (Table 20). Of those who were Baccalaureate prepared, 68 had since completed a Master's or Doctorate. As shown in Table 21, a considerable number of RNs employed in 1998 were also enrolled in continuing post-secondary education – 579 (6.6%) were enrolled in undergraduate post-secondary education (528 part-time; 51 full-time); 56 (1.0%) were enrolled in a Master's program, mostly on a part-time basis; and one RN was enrolled in a part-time doctorate degree.

By far, the greatest percentage of RNs employed in Nova Scotia were educated here in the province (77.6% in 1998). As shown in Table 22, however, the percentage of employed RNs who were educated locally has been decreasing since 1993 in response to the significant decrease in the number of new graduates since the closure of the province's diploma schools of nursing. Consequently, the local workforce has been increasingly dependent upon the in-migration of already qualified RNs from other provinces and countries. The number of employed RNs from outside the province increased by 3.4% from 1993 to 1998, the largest portion of whom were from other Atlantic provinces.

### *Outgoing and Incoming Registered Nurses*

As described earlier, each year between 1993 and 1998, there was an annual net loss in both the number of RNs registered to practice in Nova Scotia and in the number employed in nursing. Based on the registration data, approximately 100 (15-20%) of RNs who discontinue their registration in a given year, will return to nursing during a future registration period. The largest portion of those who leave, however, tend not to return. The total number of RNs who have discontinued their registration at

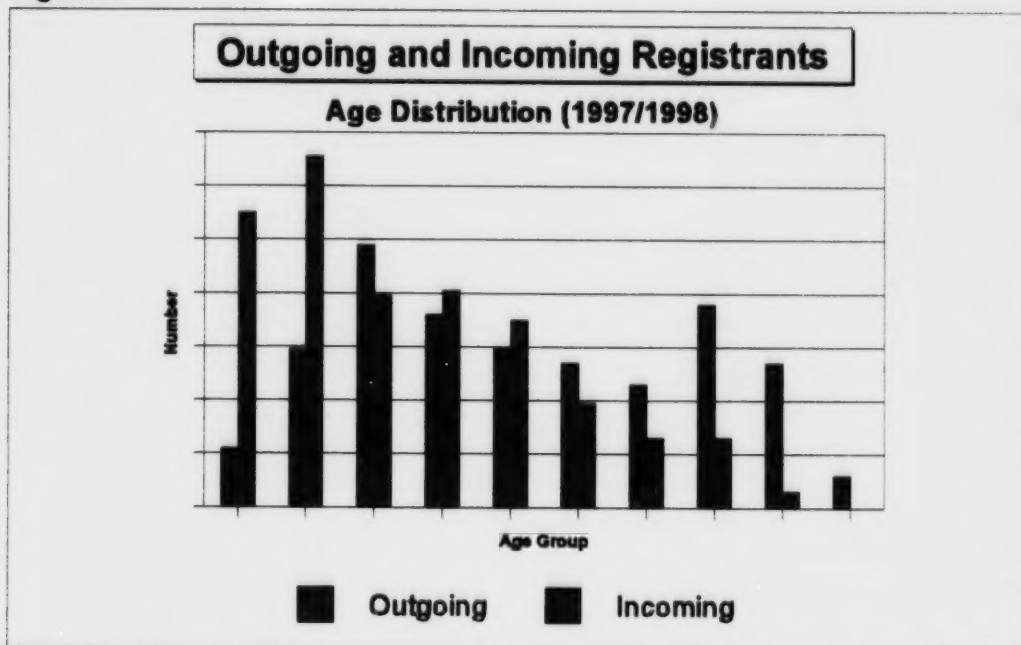
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<sup>1</sup> Based on 80 years combined age and years of service (at 85 years potential retirement equals 2126.

some point since 1993 and had not returned up to 1998 was approximately 2900. Approximately 1100 (38%) of those were over the age of 50 and, therefore, most are assumed to have retired. Nurses who left for reasons other than retirement were more likely to leave the Central and Eastern regions and were more likely to leave casual full-time and casual part-time positions.

Of those RNs who were employed in nursing in 1997, 583 (6.7%) had not re-registered or were not employed in nursing in 1998. Those RNs who left nursing positions were spread across all age groups; 188 (32%) were over the age of 50 and assumed to have retired (Figure 9). Those coming into these nursing positions were predominantly in the younger age groups.

**Figure 9**



The largest number of outgoing RNs were leaving regular full-time positions (Figure 10). Incoming nurses, however, moved into predominantly part-time casual positions since casual employees already in the system were moving into the full-time positions as they became available.

Geographically, three of the four regions had a greater number of nurses leaving than they had coming in (Figure 11); Central region, on the other hand, had shown a net gain over the previous year.

Figure 10

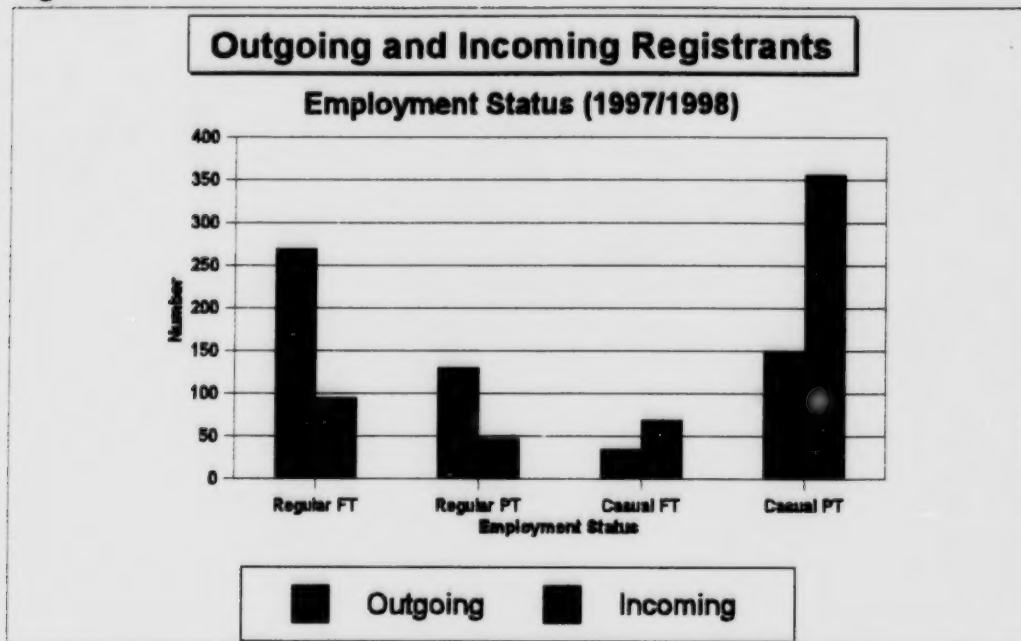
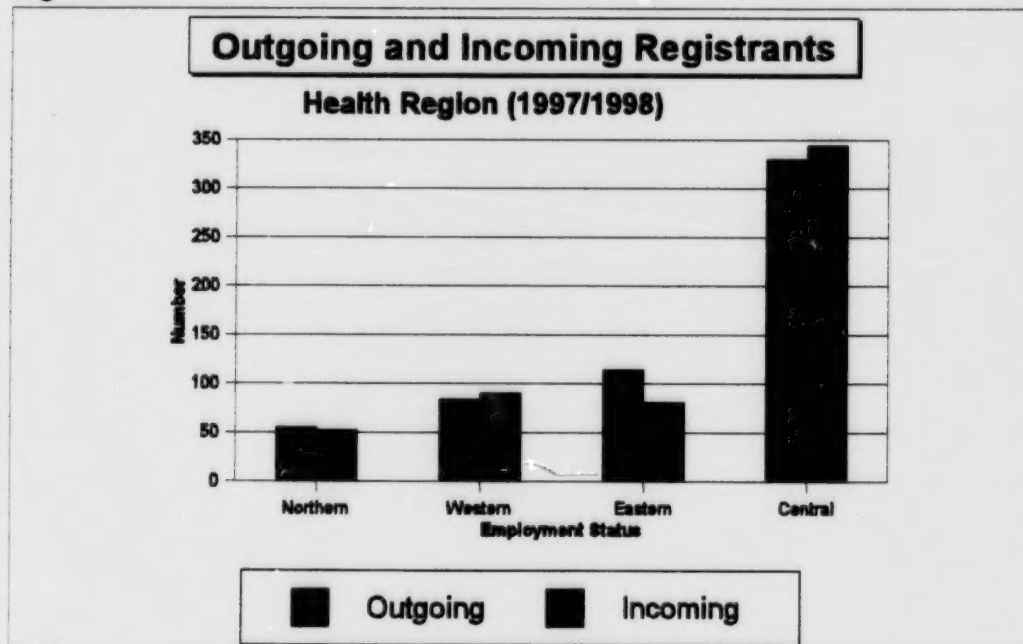


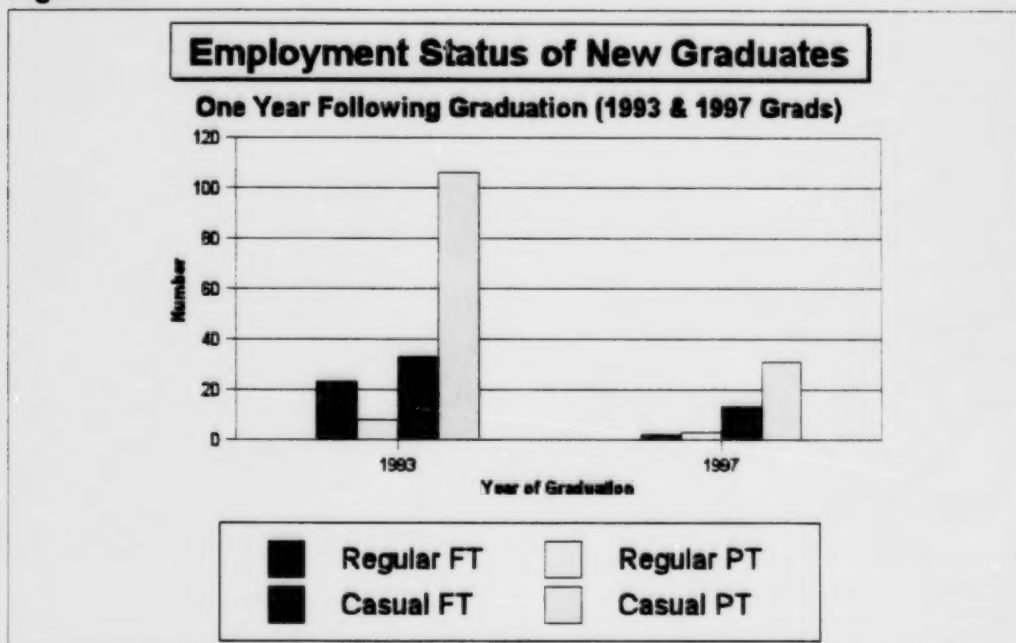
Figure 11



## Employment of New Graduates

As shown in Figure 12, compared to new graduates in 1993, 1997 graduates were less able to find regular full-time employment in Nova Scotia up to one year following graduation (keeping in mind that there were considerably fewer graduates in 1997 than in 1993). Similar to 1993, 1997 graduates were more likely to find only casual employment.

Figure 12

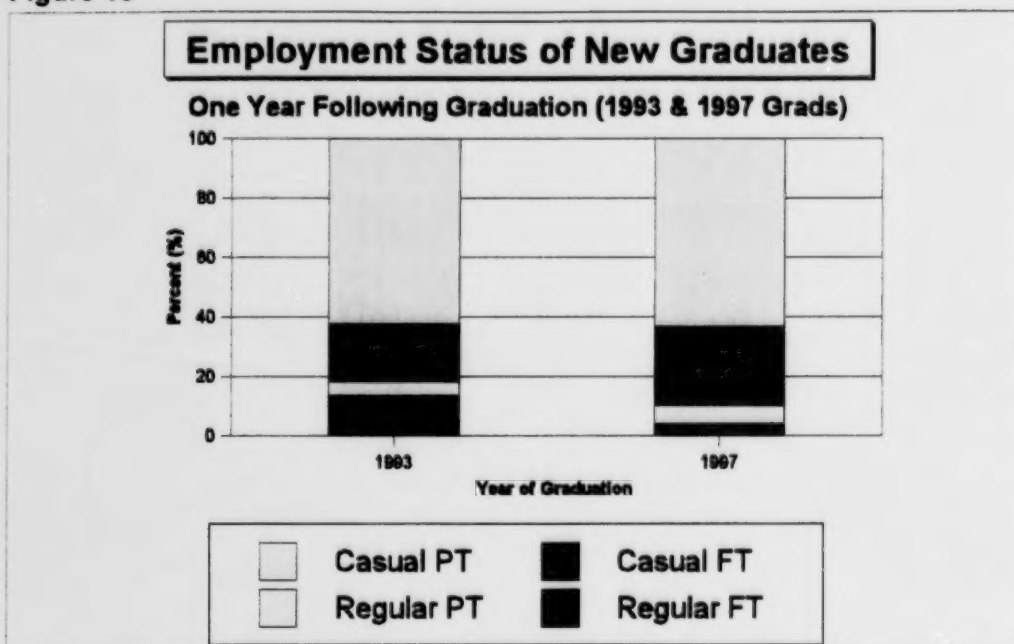


When examining employment status as a percentage of the total number of graduates employed, the largest percentage of new 1997 graduates were, by far, employed in casual part-time and casual full-time positions in 1998 (Figure 13).

An increasing number of new graduates were able to find full-time employment after five years, but still did not make up the majority. After five years over half were still employed in casual positions. In fact, a considerable portion of those who graduated in 1993 had left the Nova Scotia workforce by 1998.



Figure 13



### Licensed Practical Nurses

Unlike the Registered Nurses supply, the number of Licensed Practical Nurses (LPNs) registered to practice in Nova Scotia remained fairly stable from 1988 to 1998 at range of approximately 3200-3400 (Figure 14, Table 23). The number employed as an LPN over the 10-year period, however, has shown a general increase from 2495 in 1988 to 2933 in 1998. At the same time, LPNs have experienced increasing rates of underemployment. The number of LPNs employed as Personal Care Workers (PCWs) increased from 77 to 210 between 1988 and 1998, an increase of 173%.

There have also been changes in employment status. From 1988 to 1998, the number of LPNs employed in full-time positions had continually decreased, while the number employed in part-time and casual positions has increased (Figure 15, Table 23). There are currently more LPNs employed on a part-time or casual basis than there are full-time.

As shown in Table 24, most LPNs are employed in either hospitals or nursing homes; combined they accounted for 73% of all employed LPNs in 1998. Similar to changes in patterns of RN employment, the percentage of LPNs employed in an acute care setting have decreased over the past decade, while the number employed in nursing homes has continuously increased.

Figure 14

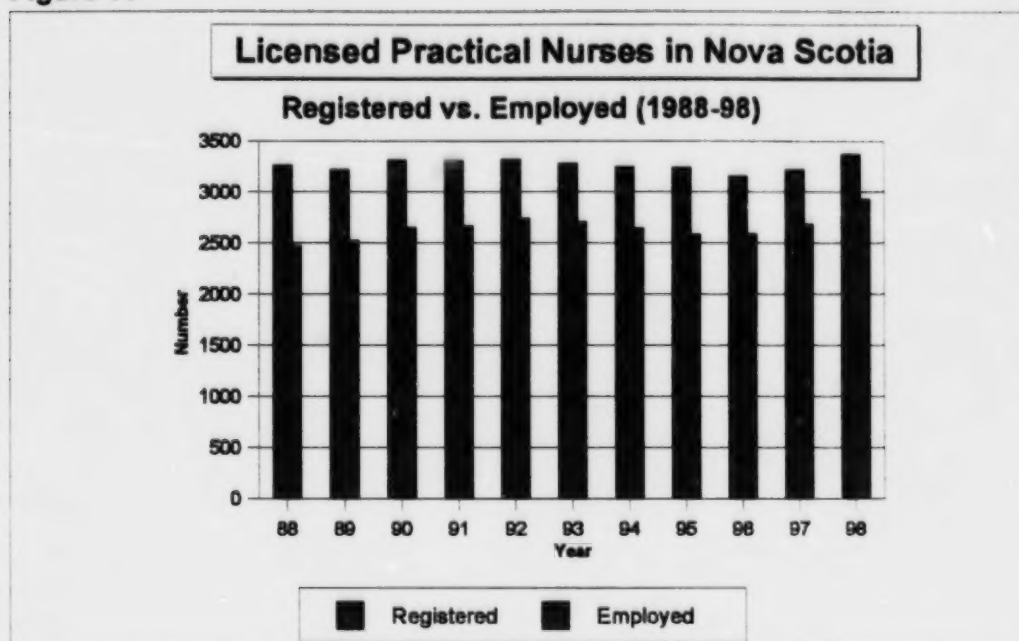


Figure 15

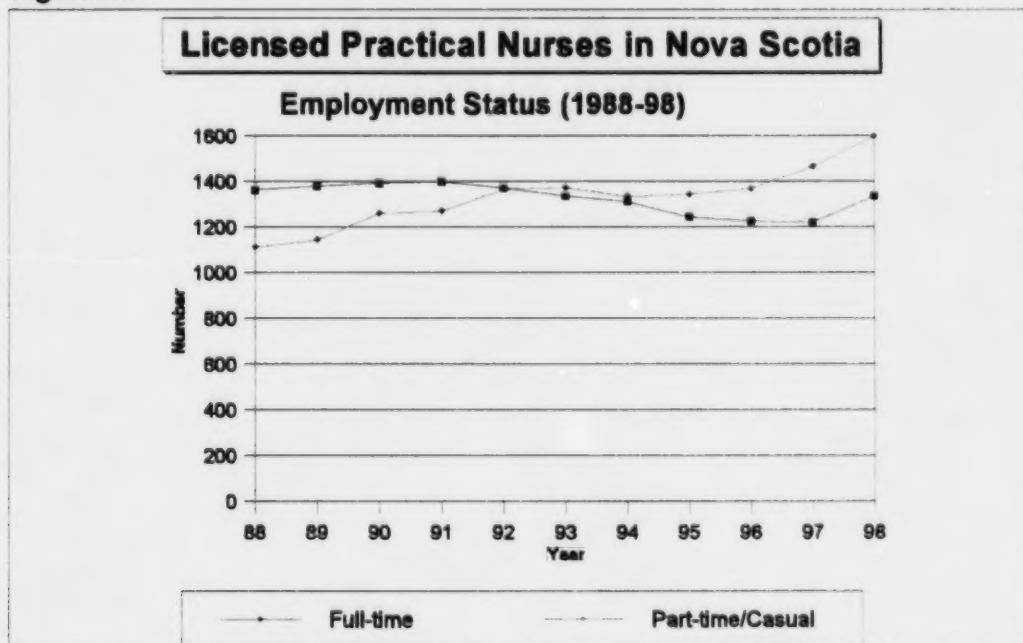
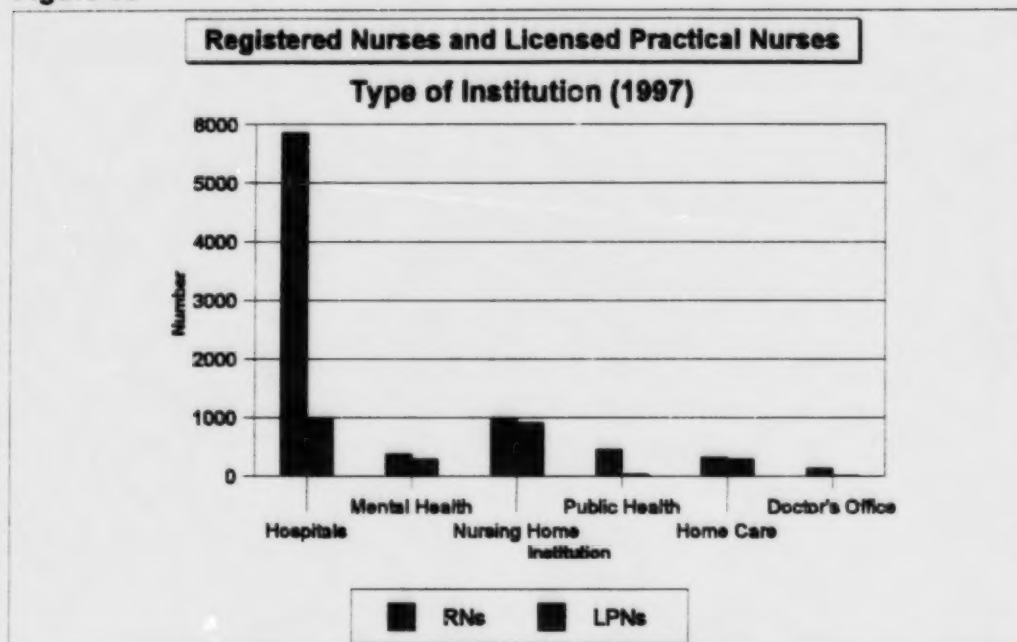


Figure 16 provides a graphic representation of the ratio of RNs to LPNs in the various employment settings. In Mental Health, Nursing Homes and Home Care, for example, the ratio is just above 1:1. Comparatively, the ratio of RNs to LPNs in hospitals is approximately 6:1 overall.

**Figure 16**



Given the current availability of LPNs who are not employed in nursing and the number underemployed as PCWs, there does not appear to be a pending shortage of LPNs to meet the needs of the Nova Scotia workforce. Consequently, pending retirements are not as great a factor as in the RN supply. Also, LPNs are slightly younger than RNs overall, at a mean age of 40.1 compared to 41.5 for RNS. Of all LPNs registered in 1998, 388 (19%) were over the age of 50.

Table 1

TOTAL REGISTERED NURSES VERSUS REGISTERED NURSES EMPLOYED IN NURSING IN NOVA SCOTIA											
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739
% Employed in NS	91.9%	92.3%	93.7%	92.8%	92.3%	92.6%	92.5%	92.0%	92.5%	93.7%	93.8%

Table 2

NET CHANGE IN TOTAL REGISTERED NURSES VERSUS NET CHANGE IN REGISTERED NURSES EMPLOYED IN NURSING IN NOVA SCOTIA											
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312
Net Change		246	-186	198	293	15	-92	-165	-314	-157	-27
% Change		2.6%	-1.9%	2.1%	3.0%	0.1%	-0.9%	-1.7%	-3.2%	-1.7%	-0.3%
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739
Net Change		270	-35	91	225	48	-96	-205	-238	-34	-13
% Change		3.1%	-0.4%	1.0%	2.5%	0.5%	-1.0%	-2.2%	-2.6%	-0.4%	-0.1%

Table 3

REGISTERED NURSES BY HEALTH REGION						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
Northern	1039	1026	987	974	970	963
Western	1494	1485	1421	1390	1379	1385
Eastern	1874	1855	1775	1739	1731	1692
Central	4908	4930	4818	4683	4672	4699
Total	9315	9296	9001	8786	8752	8739
<b>Percent</b>						
Northern	11.2%	11.0%	11.0%	11.1%	11.1%	11.0%
Western	16.0%	16.0%	15.8%	15.8%	15.8%	15.8%
Eastern	20.1%	20.0%	19.7%	19.8%	19.8%	19.4%
Central	52.7%	53.0%	53.5%	53.3%	53.4%	53.8%
Total	100%	100%	100%	100%	100%	100%

Table 4

REGISTERED NURSES BY TYPE OF INSTITUTION						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
Hospital	6587	6460	6102	5923	5858	5954
Mental Health Centre	354	359	339	235	196	132
Home Care Agency	109	150	244	256	315	294
Community Health Agency	424	417	400	441	458	424
Nursing Station	7	5	4	8	7	11
Nursing Home	870	889	887	950	996	999
Rehabilitation Centre	211	206	191	182	183	189
Educational Institution	205	208	187	168	168	153
Physician's Office	146	145	137	129	132	135
Association/Government	106	118	125	115	118	147
Occupational Health	118	123	123	106	117	119
Private Nursing	95	113	124	139	89	66
Self-employed	27	38	44	53	52	59
Other	39	49	66	81	63	57
Total	9298	9280	8973	8786	8752	8739
<b>Percent</b>						
Hospital	70.8%	69.6%	68.0%	67.4%	66.9%	68.1%
Mental Health Centre	3.8%	3.9%	3.8%	2.7%	2.2%	1.5%
Home Care Agency	1.2%	1.6%	2.7%	2.9%	3.6%	3.4%
Community Health Agency	4.6%	4.5%	4.5%	5.0%	5.2%	4.9%
Nursing Station	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%
Nursing Home	9.4%	9.6%	9.9%	10.8%	11.4%	11.4%
Rehabilitation Centre	2.3%	2.2%	2.1%	2.1%	2.1%	2.2%
Educational Institution	2.2%	2.2%	2.1%	1.9%	1.9%	1.8%
Physician's Office	1.6%	1.6%	1.5%	1.5%	1.5%	1.5%
Association/Government	1.1%	1.3%	1.4%	1.3%	1.3%	1.7%
Occupational Health	1.3%	1.3%	1.4%	1.2%	1.3%	1.4%
Private Nursing	1.0%	1.2%	1.4%	1.6%	1.0%	0.8%
Self-employed	0.3%	0.4%	0.5%	0.6%	0.6%	0.7%
Other	0.4%	0.5%	0.7%	0.9%	0.7%	0.7%
Total	100%	100%	100%	100%	100%	100%



Table 5

REGISTERED NURSES BY TYPE OF POSITION						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
Staff Nurse	7186	7175	7003	7100	6962	6896
Chief Nursing Office	191	176	170	114	128	153
Assistant Director	54	49	41	73	65	42
Supervisor	699	661	621	464	557	610
Clinical Nurse Specialist	40	38	43	23	29	26
Head Nurse	420	395	351	326	313	330
Office/Occupational Health	197	190	180	163	165	159
Instructor/Professor	248	239	218	192	195	201
Researcher	48	61	69	75	81	82
Consultant	48	51	56	52	52	59
Other	160	245	218	204	205	181
Total	9291	9280	8970	8786	8752	8739
<b>Percent</b>						
Staff Nurse	77.3%	77.3%	78.1%	80.8%	79.5%	78.9%
Chief Nursing Office	2.1%	1.9%	1.9%	1.3%	1.5%	1.8%
Assistant Director	0.6%	0.5%	0.5%	0.8%	0.7%	0.5%
Supervisor	7.5%	7.1%	6.9%	5.3%	6.4%	7.0%
Clinical Nurse Specialist	0.4%	0.4%	0.5%	0.3%	0.3%	0.3%
Head Nurse	4.5%	4.3%	3.9%	3.7%	3.6%	3.8%
Office/Occupational Health	2.1%	2.0%	2.0%	1.9%	1.9%	1.8%
Instructor/Professor	2.7%	2.6%	2.4%	2.2%	2.2%	2.3%
Researcher	0.5%	0.7%	0.8%	0.9%	0.9%	0.9%
Consultant	0.5%	0.5%	0.6%	0.6%	0.6%	0.7%
Other	1.7%	2.6%	2.4%	2.3%	2.3%	2.1%
Total	100%	100%	100%	100%	100%	100%

Table 6

REGISTERED NURSES BY PRIMARY AREA OF RESPONSIBILITY						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
Medical/Surgical	2857	2700	2508	2249	2234	2114
Psychiatric/Mental Health	558	578	562	543	530	533
Paediatric	474	465	386	385	377	404
Maternal/Newborn	661	643	608	570	560	563
Geriatric	976	989	1029	1080	1108	1103
Critical Care	695	702	725	717	690	712
Community Health	401	400	404	399	396	371
Ambulatory Care	116	116	123	152	188	194
Home Care	232	296	372	401	418	414
Occupational Health	113	117	121	109	101	96
Oncology				263	133	143
Operating Room/RR	413	414	391	468	497	499
Emergency Care	422	421	406	310	393	453
Rehabilitation				165	154	154
Several Clinical Areas	253	251	230	106	105	123
Other	158	258	261	123	167	138
Admin. - Service	434	396	361	228	229	262
Admin. - Education	47	46	37	23	28	28
Admin. - Other	102	103	90	75	69	60
Teaching students	179	173	148	123	131	139
Teaching employees	73	72	72	74	68	64
Teaching clients	57	62	69	63	61	69
Other teaching	13	14	20	85	40	31
Nursing research	9	12	11	21	20	13
Other research	39	42	43	54	55	59
Total	9282	9270	8977	8786	8752	8739

# **REGISTERED NURSES BY PRIMARY AREA OF RESPONSIBILITY (CONT'D)**

<b>Percent</b>						
Medical/Surgical	30.8%	29.1%	27.9%	25.6%	25.5%	24.2%
Psychiatric/Mental Health	6.0%	6.2%	6.3%	6.2%	6.1%	6.1%
Paediatric	5.1%	5.0%	4.3%	4.4%	4.3%	4.6%
Maternal/Newborn	7.1%	6.9%	6.8%	6.5%	6.4%	6.4%
Geriatric	10.5%	10.7%	11.5%	12.3%	12.7%	12.6%
Critical Care	7.5%	7.6%	8.1%	8.2%	7.9%	8.1%
Community Health	4.3%	4.3%	4.5%	4.5%	4.5%	4.2%
Ambulatory Care	1.2%	1.3%	1.4%	1.7%	2.1%	2.2%
Home Care	2.5%	3.2%	4.1%	4.6%	4.8%	4.7%
Occupational Health	1.2%	1.3%	1.3%	1.2%	1.2%	1.1%
Oncology	0.0%	0.0%	0.0%	3.0%	1.5%	1.6%
Operating Room/RR	4.4%	4.5%	4.4%	5.3%	5.7%	5.7%
Emergency Care	4.5%	4.5%	4.5%	3.5%	4.5%	5.2%
Rehabilitation	0.0%	0.0%	0.0%	1.9%	1.8%	1.8%
Several Clinical Areas	2.7%	2.7%	2.6%	1.2%	1.2%	1.4%
Other	1.7%	2.8%	2.9%	1.4%	1.9%	1.6%
Admin. - Service	4.7%	4.3%	4.0%	2.6%	2.6%	3.0%
Admin. - Education	0.5%	0.5%	0.4%	0.3%	0.3%	0.3%
Admin. - Other	1.1%	1.1%	1.0%	0.9%	0.8%	0.7%
Teaching students	1.9%	1.9%	1.6%	1.4%	1.5%	1.6%
Teaching employees	0.8%	0.8%	0.8%	0.8%	0.8%	0.7%
Teaching clients	0.6%	0.7%	0.8%	0.7%	0.7%	0.8%
Other teaching	0.1%	0.2%	0.2%	1.0%	0.5%	0.4%
Nursing research	0.1%	0.1%	0.1%	0.2%	0.2%	0.1%
Other research	0.4%	0.5%	0.5%	0.6%	0.6%	0.7%
Total	100%	100%	100%	100%	100%	100%

**Table 7**

<b>REGISTERED NURSES BY EMPLOYMENT STATUS</b>						
	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
<b>Number</b>						
Regular FT	5435	5366	5053	4919	4736	4644
Regular PT	2024	2006	1938	1926	2036	2071
Casual FT	377	402	437	451	466	466
Casual PT	1484	1531	1575	1490	1514	1554
Total	9320	9305	9003	8786	8752	8735
<b>Percent</b>						
Regular FT	58.3%	57.7%	56.1%	56.0%	54.1%	53.2%
Regular PT	21.7%	21.6%	21.5%	21.9%	23.3%	23.7%
Casual FT	4.0%	4.3%	4.9%	5.1%	5.3%	5.3%
Casual PT	15.9%	16.5%	17.5%	17.0%	17.3%	17.8%
Total	100%	100%	100%	100%	100%	100%

Table 8

REGISTERED NURSES BY TYPE OF INSTITUTION BY EMPLOYMENT STATUS (1998)									
	Frequencies			Column Percentage			Row Percentage		
	Regular	Casual	Total	Regular	Casual	Total	Regular	Casual	Total
Hospital	4648	1306	5954	69.2%	64.5%	68.1%	78.1%	21.9%	100%
Mental Health	105	27	132	1.6%	1.3%	1.5%	79.5%	20.5%	100%
Home Care Agency	147	147	294	2.2%	7.3%	3.4%	50.0%	50.0%	100%
Community Health	322	102	424	4.8%	5.0%	4.9%	75.9%	24.1%	100%
Nursing Station	6	5	11	0.1%	0.2%	0.1%	54.5%	45.5%	100%
Nursing Home	748	251	999	11.1%	12.4%	11.4%	74.9%	25.1%	100%
Rehabilitation Centre	160	29	189	2.4%	1.4%	2.2%	84.7%	15.3%	100%
Educational	124	29	153	1.8%	1.4%	1.8%	81.0%	19.0%	100%
Physician's Office	116	19	135	1.7%	0.9%	1.5%	85.9%	14.1%	100%
Association/Govern	134	13	147	2.0%	0.6%	1.7%	91.2%	8.8%	100%
Occupational Health	89	30	119	1.3%	1.5%	1.4%	74.8%	25.2%	100%
Private Nursing	25	41	66	0.4%	2.0%	0.8%	37.9%	62.1%	100%
Self-employed	43	16	59	0.6%	0.8%	0.7%	72.9%	27.1%	100%
Other	48	9	57	0.7%	0.4%	0.7%	84.2%	15.8%	100%
Total	6715	2024	8739	100%	100%	100%	76.8%	23.2%	100%

Table 9

REGISTERED NURSES BY TYPE OF POSITION BY EMPLOYMENT STATUS (1998)									
	Frequencies			Column Percentage			Row Percentage		
	Regular	Casual	Total	Regular	Casual	Total	Regular	Casual	Total
Staff Nurse	5075	1821	6896	75.6%	90.0%	78.9%	73.6%	26.4%	100%
Chief Nursing Officer	148	5	153	2.2%	0.2%	1.8%	96.7%	3.3%	100%
Assistant Director	42	-	42	0.6%	0.0%	0.5%	100.0%	0.0%	100%
Supervisor	536	74	610	8.0%	3.7%	7.0%	87.9%	12.1%	100%
Clinical Nurse	26	-	26	0.4%	0.0%	0.3%	100.0%	0.0%	100%
Head Nurse	312	18	330	4.6%	0.9%	3.8%	94.5%	5.5%	100%
Office/Occupational	138	21	159	2.1%	1.0%	1.8%	86.8%	13.2%	100%
Instructor/Professor	173	28	201	2.6%	1.4%	2.3%	86.1%	13.9%	100%
Researcher	66	16	82	1.0%	0.8%	0.9%	80.5%	19.5%	100%
Consultant	51	8	59	0.8%	0.4%	0.7%	86.4%	13.6%	100%
Other	148	33	181	2.2%	1.6%	2.1%	81.8%	18.2%	100%
Total	6715	2024	8739	100%	100%	100%	76.8%	23.2%	100%



Table 10

REGISTERED NURSES BY PRIMARY AREA OF RESPONSIBILITY BY EMPLOYMENT STATUS (1998)										
	Frequencies			Column Percentage			Row Percentage			
	Regular	Casual	Total	Regular	Casual	Total	Regular	Casual	Total	
Medical/Surgical	1538	576	2114	22.9%	28.5%	24.2%	72.8%	27.2%	100%	
Psychiatric/Mental	420	113	533	6.3%	5.6%	6.1%	78.8%	21.2%	100%	
Paediatric	285	119	404	4.2%	5.9%	4.6%	70.5%	29.5%	100%	
Maternal/Newborn	394	169	563	5.9%	8.3%	6.4%	70.0%	30.0%	100%	
Geriatric	833	270	1103	12.4%	13.3%	12.6%	75.5%	24.5%	100%	
Critical Care	600	112	712	8.9%	5.5%	8.1%	84.3%	15.7%	100%	
Community Health	283	88	371	4.2%	4.3%	4.2%	76.3%	23.7%	100%	
Ambulatory Care	166	28	194	2.5%	1.4%	2.2%	85.6%	14.4%	100%	
Home Care	227	187	414	3.4%	9.2%	4.7%	54.8%	45.2%	100%	
Occupational Health	86	10	96	1.3%	0.5%	1.1%	89.6%	10.4%	100%	
Oncology	117	26	143	1.7%	1.3%	1.6%	81.8%	18.2%	100%	
Operating Room/RR	446	53	499	6.6%	2.6%	5.7%	89.4%	10.6%	100%	
Emergency Care	367	86	453	5.5%	4.2%	5.2%	81.0%	19.0%	100%	
Rehabilitation	120	34	154	1.8%	1.7%	1.8%	77.9%	22.1%	100%	
Several Clinical Areas	77	46	123	1.1%	2.3%	1.4%	62.6%	37.4%	100%	
Other	99	39	138	1.5%	1.9%	1.6%	71.7%	28.3%	100%	
Admin. - Service	251	11	262	3.7%	0.5%	3.0%	95.8%	4.2%	100%	
Admin. - Education	26	2	28	0.4%	0.1%	0.3%	92.9%	7.1%	100%	
Admin. - Other	57	3	60	0.8%	0.1%	0.7%	95.0%	5.0%	100%	
Teaching students	113	26	139	1.7%	1.3%	1.6%	81.3%	18.7%	100%	
Teaching employees	62	2	64	0.9%	0.1%	0.7%	96.9%	3.1%	100%	
Teaching clients	59	10	69	0.9%	0.5%	0.8%	85.5%	14.5%	100%	
Other teaching	30	1	31	0.4%	0.0%	0.4%	96.8%	3.2%	100%	
Nursing research	10	3	13	0.1%	0.1%	0.1%	76.9%	23.1%	100%	
Other research	49	10	59	0.7%	0.5%	0.7%	83.1%	16.9%	100%	
Total	6715	2024	8739	100%	100%	100%	76.8%	23.2%	100%	

Table 11

REGISTERED NURSES BY HEALTH REGION OF EMPLOYMENT BY EMPLOYMENT STATUS (1998)										
	Frequencies			Column Percentage			Row Percentage			
	Regular	Casual	Total	Regular	Casual	Total	Regular	Casual	Total	
Northern	728	235	963	10.8%	11.6%	11.0%	75.6%	24.4%	100%	
Western	1054	331	1385	15.7%	16.4%	15.8%	76.1%	23.9%	100%	
Eastern	1220	472	1692	18.2%	23.3%	19.4%	72.1%	27.9%	100%	
Central	3713	986	4699	55.3%	48.7%	53.8%	79.0%	21.0%	100%	
Total	6715	2024	8739	100%	100%	100%	76.8%	23.2%	100%	

Table 12

MEAN AGE OF ALL REGISTERED NURSES IN NOVA SCOTIA											
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Mean Age	37.3	37.7	38.4	38.8	39.1	40.7	39.8	39.9	40.5	41.1	41.5

**Table 13**

<b>MEAN AGE OF REGISTERED NURSES BY INITIAL NURSING EDUCATION (1998)</b>				
	<b>Mean</b>	<b>Number</b>	<b>Minimum</b>	<b>Maximum</b>
Diploma	42.6	7596	22	71
Bachelor's	35.3	1140	22	64
Master's	45.3	3	34	57
Total	41.5	8739	22	71

**Table 14**

<b>MEAN AGE OF REGISTERED NURSES BY EMPLOYMENT STATUS (1998)</b>				
	<b>Mean</b>	<b>Number</b>	<b>Minimum</b>	<b>Maximum</b>
Regular	42.8	6715	22	71
Casual	37.2	2024	22	69
Total	41.5	8739	22	71

**Table 15**

<b>MEAN AGE OF REGISTERED NURSES BY HEALTH REGION OF EMPLOYMENT (1998)</b>				
	<b>Mean</b>	<b>Number</b>	<b>Minimum</b>	<b>Maximum</b>
Northern	42.6	963	22	68
Western	42.3	1385	22	67
Eastern	42.7	1692	22	71
Central	40.7	4699	22	71
Total	41.5	8739	22	71

**Table 16**

<b>MEAN AGE OF REGISTERED NURSES BY TYPE OF INSTITUTION (1998)</b>				
	<b>Mean</b>	<b>Number</b>	<b>Minimum</b>	<b>Maximum</b>
Hospital	40.3	5954	22	67
Mental Health Centre	45.2	132	25	64
Home Care Agency	41.2	294	22	65
Community Health	44.4	424	23	67
Nursing Station	41.6	11	28	58
Nursing Home	43.6	999	22	71
Rehabilitation Centre	43.0	189	23	64
Educational Institution	46.7	153	27	65
Physician's Office	44.3	135	23	67
Association/Gov't	44.3	147	22	69
Occupational Health	46.2	119	28	64
Private Nursing	44.3	66	25	66
Self-employed	50.3	59	33	67
Other	47.1	57	27	71
Total	41.5	8739	22	71

**Table 17**

<b>MEAN AGE OF REGISTERED NURSES BY TYPE OF POSITION (1998)</b>				
	<b>Mean</b>	<b>Number</b>	<b>Minimum</b>	<b>Maximum</b>
Staff Nurse	40.4	6896	22	71
Chief Nursing Office	46.9	153	26	64
Assistant Director	49.1	42	33	61
Supervisor	45.4	610	22	71
Clinical Nurse Specialist	46.2	26	29	63
Head Nurse	45.7	330	23	67
Office/Occupational	45.8	159	23	65
Instructor/Professor	46.1	201	28	64
Researcher	42.3	82	26	60
Consultant	47.6	59	28	64
Other	45.9	181	27	67
Total	41.5	8739	22	71

Table 18

MEAN AGE OF REGISTERED NURSES BY PRIMARY AREA OF RESPONSIBILITY (1998)				
	Mean	Number	Minimum	Maximum
Medical/Surgical	38.5	2114	22	67
Psychiatric/Mental Health	42.9	533	23	65
Paediatric	38.1	404	22	61
Maternal/Newborn	40.6	563	22	61
Geriatric	43.4	1103	22	71
Critical Care	38.8	712	24	65
Community Health	44.1	371	23	69
Ambulatory Care	44.8	194	26	67
Home Care	42.7	414	22	66
Occupational Health	48.1	96	32	64
Oncology	38.2	143	22	59
Operating Room/RR	43.9	499	24	63
Emergency Care	43.1	453	22	67
Rehabilitation	41.6	154	23	65
Several Clinical Areas	39.0	123	22	67
Other	42.3	138	22	63
Admin. - Service	47.6	262	22	64
Admin. - Education	45.3	28	28	58
Admin. - Other	47.9	60	26	63
Teaching students	46.9	139	28	64
Teaching employees	43.7	64	29	63
Teaching clients	45.8	69	27	61
Other teaching	48.0	31	29	61
Nursing research	40.5	13	28	54
Other research	42.9	59	27	60
Total	41.5	8739	22	71

**Table 19**

<b>REGISTERED NURSES BY INITIAL EDUCATION</b>						
	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
<b>Number</b>						
Diploma	8451	8413	8066	7784	7699	7596
Bachelor's	866	889	933	999	1050	1140
Master's	3	3	3	3	3	3
Total	9320	9305	9002	8786	8752	8739
<b>Percent</b>						
Diploma	90.7%	90.4%	89.6%	88.6%	88.0%	86.9%
Bachelor's	9.3%	9.6%	10.4%	11.4%	12.0%	13.0%
Master's	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100%	100%	100%	100%	100%	100%



Table 20

REGISTERED NURSES BY OTHER NURSING EDUCATION						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
Nursing Certificate	3	373	656	1004	1228	1406
Nursing Baccalaureate	679	724	767	802	764	779
Nursing Master's	106	122	118	127	143	144
Nursing Doctorate	7	6	4	4	5	6
No Other Nursing Education	8525	8079	7449	6849	6612	6404
Total	9320	9304	8994	8786	8752	8739
<b>Percent</b>						
Nursing Certificate	0.0%	4.0%	7.3%	11.4%	14.0%	16.1%
Nursing Baccalaureate	7.3%	7.8%	8.5%	9.1%	8.7%	8.9%
Nursing Master's	1.1%	1.3%	1.3%	1.4%	1.6%	1.6%
Nursing Doctorate	0.1%	0.1%	0.0%	0.0%	0.1%	0.1%
No Other Nursing Education	91.5%	86.8%	82.8%	78.0%	75.5%	73.3%
Total	100%	100%	100%	100%	100%	100%

Table 21

REGISTERED NURSES BY CONTINUING EDUCATION						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
No	8788	8713	8348	8106	8195	8066
FT Certificate	0	0	4	0	0	0
FT Baccalaureate	58	48	60	69	45	51
FT Master's	16	16	13	16	9	9
FT Doctorate	4	3	3	2	0	0
PT Certificate	0	4	22	9	0	0
PT Baccalaureate	351	446	472	509	431	528
PT Master's	92	71	69	73	71	83
PT Doctorate	11	4	3	2	1	2
Total	9320	9305	8994	8786	8752	8739
<b>Percent</b>						
No	94.3%	93.6%	92.8%	92.3%	93.6%	92.3%
FT Certificate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
FT Baccalaureate	0.6%	0.5%	0.7%	0.8%	0.5%	0.6%
FT Master's	0.2%	0.2%	0.1%	0.2%	0.1%	0.1%
FT Doctorate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
PT Certificate	0.0%	0.0%	0.2%	0.1%	0.0%	0.0%
PT Baccalaureate	3.8%	4.8%	5.2%	5.8%	4.9%	6.0%
PT Master's	1.0%	0.8%	0.8%	0.8%	0.8%	0.9%
PT Doctorate	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	100%	100%	100%	100%	100%	100%

Table 22

REGISTERED NURSES BY PLACE OF GRADUATION						
	1993	1994	1995	1996	1997	1998
<b>Number</b>						
Nova Scotia	7424	7441	7191	6991	6890	6782
Atlantic Province	891	890	888	898	948	1032
Other Province	754	729	691	671	691	702
United States	69	62	63	58	59	58
Other	182	181	170	168	164	165
Total	9320	9303	9003	8786	8752	8739
<b>Percent</b>						
Nova Scotia	79.7%	80.0%	79.9%	79.6%	78.7%	77.6%
Atlantic Province	9.6%	9.6%	9.9%	10.2%	10.8%	11.8%
Other Province	8.1%	7.8%	7.7%	7.6%	7.9%	8.0%
United States	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Other	2.0%	1.9%	1.9%	1.9%	1.9%	1.9%
Total	100%	100%	100%	100%	100%	100%

Table 23

LICENSED PRACTICAL NURSES BY EMPLOYMENT STATUS											
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Frequency</b>											
Full-time	1363	1379	1392	1399	1371	1336	1311	1244	1225	1221	1336
Part-time/Casual	1113	1144	1261	1270	1367	1373	1334	1342	1368	1465	1597
Not in nursing	788	697	630	598	552	574	603	658	932	536	438
Total	3264	3220	3316	3308	3320	3283	3248	3244	3160	3220	3371
<b>Percent</b>											
Full-time	42%	43%	42%	42%	41%	41%	40%	38%	39%	38%	40%
Part-time/Casual	34%	36%	38%	38%	41%	42%	41%	41%	43%	45%	47%
Not in nursing	24%	21%	20%	20%	18%	17%	19%	21%	18%	17%	13%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 24

LICENSED PRACTICAL NURSES BY EMPLOYMENT STATUS											
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
<b>Frequency</b>											
Hospitals	1456	1523	1520	1511	1412	1387	1310	1178	1094	990	1026
Mental Health/	320	318	311	288	321	319	313	297	291	286	207
Nursing Homes	484	480	585	588	644	662	674	689	734	915	1126
Public Health	55	58	76	93	98	95	103	67	47	42	57
Private Duty	123	125	137	170	220	205	197	135	118	84	84
Home Care								164	233	291	270
Doctor's Office	38	19	24	19	21	22	22	23	25	22	28
Admin. & Other	19	49	33	41	22	19	26	45	51	56	na
Total	2495	2572	2686	2710	2738	2709	2645	2598	2593	2686	2933
<b>Percent</b>											
Hospitals	58%	59%	57%	56%	52%	51%	50%	45%	42%	37%	35%
Mental Health/	13%	12%	12%	11%	12%	12%	12%	11%	11%	11%	7%
Nursing Homes	19%	19%	22%	22%	24%	24%	25%	27%	28%	34%	38%
Public Health	2%	2%	3%	3%	4%	4%	4%	3%	2%	2%	2%
Private Duty	5%	5%	5%	6%	8%	8%	7%	5%	5%	3%	3%
Home Care								6%	9%	11%	9%
Doctor's Office	2%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Admin. & Other	1%	2%	1%	2%	1%	1%	1%	2%	2%	2%	na
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

## **Appendix D**

### **Supply/Demand Projections**



## **Factors Affecting Supply**

The supply of Registered Nurses (RNs) and Licenced Practical Nurses (LPNs) can experience gains and losses annually in response to the following factors:

### **Gain Factors:**

- In-migration from other provinces and countries
- Reinstatements
- Re-entrants
- New graduates from education programs

### **Loss Factors:**

- Out-migration to other provinces and countries
- Retirements
- Non-registered
- Injury/Illness/Death
- Discipline

The degree of loss or gain in supply is, in turn, affected by the following:

- aging workforce - increasing number of retirements/increased sick leave/reduced work load capability
- shrinking enrolments in entry-level nursing education programs
- retention problems - casual work, increased work load, stressful work environment
- recruitment problems - casual work, increased work load, stressful work environment

## **Factors Affecting Demand**

The demand for nursing services at any point in time is extremely difficult, if not impossible, to accurately determine. The difficulty lies in the fact that demand can be affected by any or all of the following factors, few of which have existing and/or measurable data:

- bed stock
- physician supply
- relative supply of other nurse categories
- relative wages
- health care expenditures (ability/willingness of government/society to fund health care system)
- patient variables (i.e. acuity)
- staff mix (substitution within and across occupational groups)

- changes in delivery systems
- shift from hospital to community
- technological advances
- specialization
- population/demographic changes
- political-economic governmental philosophies
- aging of the nursing workforce
- deployment of nurses within the system
- work life issues (no incentive to go into profession and/or stay in profession)
- vacancies (caused by retirements, attrition, etc)
- scope of nursing practice - legislation/regulations
- number of new graduates entering the profession
- FTEs
- collective agreements
- accreditation
- professional standards

## **Projecting the Supply of and Demand for RNs and LPNs**

The attached charts show the projected supply and demand for RNs and LPNs in Nova Scotia. The supply projections are based on the numbers of nurses registered with the RNANS and the Practical Nurses Licensing Board in 1998. For RNs, three scenarios are presented. Scenario 1 represents a projection of the 1998 numbers, taking into account previous retirement patterns (14% by 55 years, 25% by 60 and 47% by 65), historical rates of non-registration, the current number of graduates from educational programs, and previous rates of in-migration and re-registration. Scenario 2 includes an estimated decreased rate of in-migration and an increased rate of non-registration in response to recent nursing initiatives in other Canadian jurisdictions. Scenario 3 includes the same decrease in in-migration resulting from the other nursing initiatives but includes an increased retention of nurses currently registered in Nova Scotia as a result of the changes proposed in this report. Because of the relative stability of the supply of LPNs, the projected supply is based on previous registration patterns only.

The demand for RNs and LPNs in Nova Scotia in 2005 involved the projection of service volumes based on utilization in the base year (1997/98). These utilization rates were applied to age/gender projections of the Nova Scotia population to project the number of days-of-care that will be required if current utilization patterns continue. To estimate the quantity of nursing resources required to support the projected days-of-care, estimates of the "nursing-hours-per-patient-day" were applied to the projected days-of-care and the resulting projections of nursing hours were converted to FTE equivalents. Projected additional FTEs required by 2005 are 455 RNs and 83 LPNs.

## CHART

### **Registered Nurses Supply (Projected) versus Demand (Projected)**

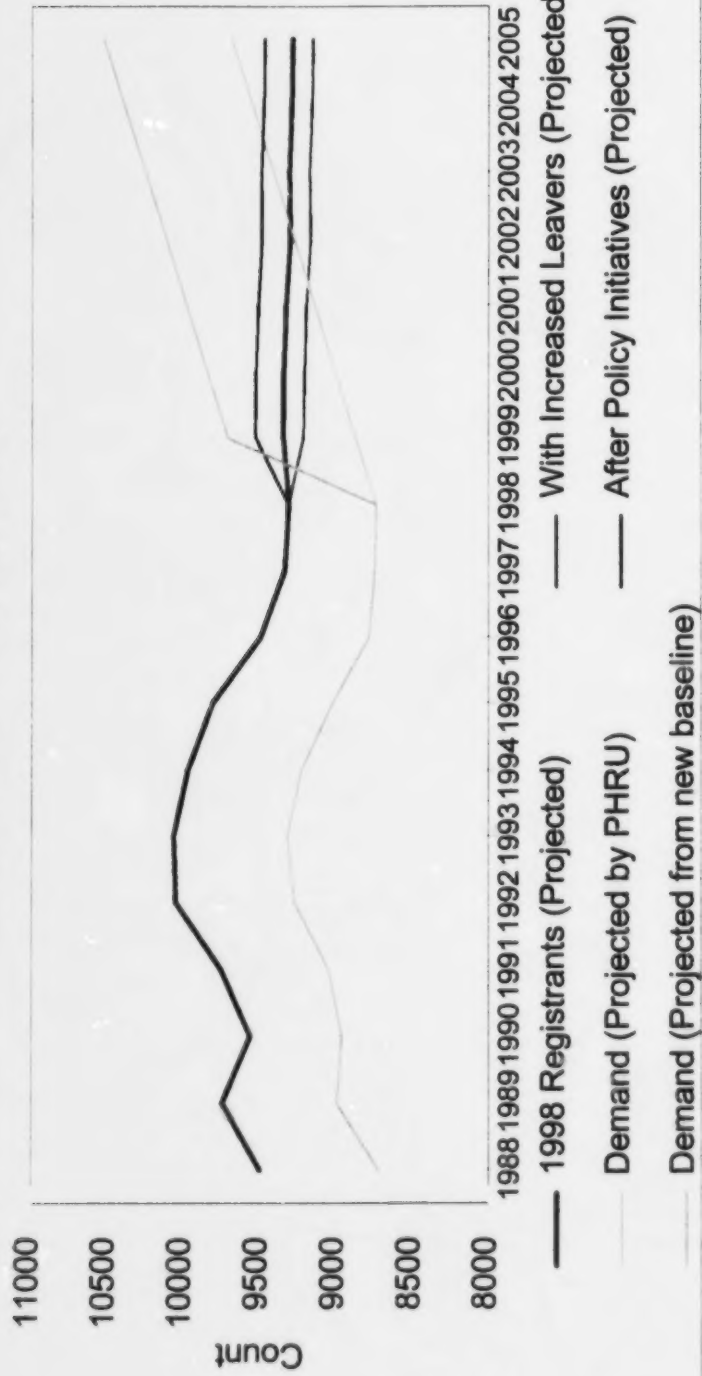
#### **Supply**

- Up to 1998, the top line on the graph represents the number of Registered Nurses registered to practice in Nova Scotia (regardless of employment status or place of residence);
- The red line projected beyond 1998 represents a projection of the status quo based on the number of registrants in 1998, previous patterns of retirement, and an estimate of 150 new graduates per year from Nova Scotia schools of nursing;
- The green line projected beyond 1998 represents the status quo plus a 30% increase in leavers and minus a 30% decrease in in-migrants in response to nursing initiatives in other provinces;
- The blue line projected beyond 1998 represents the status quo minus the 30% decrease in in-migrants because of nursing initiatives in other provinces but with a 75% increase in the retention of RNs who are registered to practice in Nova Scotia.

#### **Demand**

- Up to 1998, the bottom line on the graph represents the number of Registered Nurses registered to practice in Nova Scotia who are employed in nursing;
- The gold (lower) line projected beyond 1998 represents the number of RNs employed in 1998, plus PHRU's projected demand for an additional 136 RNs annually (954 RNs from 1998 to 2005 (7 years));
- The orange (upper) line projected beyond 1998 represents the estimated current demand for RNs in 1999 (additional 700) based on calculations by the province's nurse managers, plus PHRU's projected demand for an additional 136 RNs annually.

# Registered Nurses Supply (Projected) versus Demand (Projected)



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### Scenario 1: 1998 Registrants

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312	9350	9345	9333	9307	9313	9299	9292
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739							
In						343	321	282	97	61	81	153	153	150	150	150	150	150
New Graduates																		
Re-registrants																		
In-migrants																		
SUBTOTAL							557	654	417	437	516	588	588	585	585	585	585	585
Outs																		
Retirements						135	209	181	127	145	147	155	160	169	195	189	203	210
Short-term Leave						98	97	94	95	95	95	95	95	95	95	95	95	95
Leavers						416	513	456	372	303	300	300	300	300	300	300	300	300
SUBTOTAL						649	819	731	594	543	542	550	555	564	590	584	598	605
												38	33	33	21	-5	1	-13
																		-20

### Scenario 2: Accounting for impacts of nursing initiatives in other provinces

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312	9215	9210	9198	9172	9178	9164	9157
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739							
In						343	321	282	97	61	81	153	153	150	150	150	150	150
New Graduates																		
Re-registrants																		
In-migrants																		
SUBTOTAL							557	654	417	437	516	543	543	540	540	540	540	540
Outs																		
Retirements						135	209	181	127	145	147	155	160	169	195	189	203	210
Short-term Leave						98	97	94	95	95	95	95	95	95	95	95	95	95
Leavers						416	513	456	372	303	300	390	390	390	390	390	390	390
SUBTOTAL						649	819	731	594	543	542	640	645	654	680	674	688	695
												-97	-102	-114	-140	-134	-148	-155

### Scenario 3: Accounting for impacts of nursing initiatives in other provinces and implementation of HHRP recommendations.

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312	9530	9525	9513	9487	9493	9479	9472
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739							
In						343	321	282	97	61	81	153	153	150	150	150	150	150
New Graduates																		
Re-registrants																		
In-migrants																		
SUBTOTAL							557	654	417	437	516	543	543	540	540	540	540	540
Outs																		
Retirements						135	209	181	127	145	147	155	160	169	195	189	203	210
Short-term Leave						98	97	94	95	95	95	95	95	95	95	95	95	95
Leavers						416	513	456	372	303	300	75	75	75	75	75	75	75
SUBTOTAL						649	819	731	594	543	542	325	330	339	365	359	373	380
												218	213	201	175	181	167	160

Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739	8875	9011	9147	9263	9419	9555	9691
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739	9711	9847	9983	10119	10255	10391	10527



Scenario 1: 1990 Registrants

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312	9350	9345	9333	9307	9313	9299	9292
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739							
In:																		
New Graduates						343	321	282	97	61	81	153	153	150	150	150	150	150
Re-registrants											285	285	285	285	285	285	285	285
In-migrants											150	150	150	150	150	150	150	150
SUBTOTAL							557	654	417	437	516	588	588	585	585	585	585	585
Outs																		
Retirements						135	209	181	127	145	147	155	160	169	195	189	203	210
Short-term Leave						98	97	94	95	95	95	95	95	95	95	95	95	95
Leavers						416	513	456	372	303	300	300	300	300	300	300	300	300
SUBTOTAL						649	819	731	594	543	542	550	555	564	590	584	598	605
NET												38	33	21	-5	1	-13	-20

Scenario 2: Accounting for impacts of nursing initiatives in other provinces

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312	9350	9345	9333	9307	9313	9299	9292
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739							
In:																		
New Graduates						343	321	282	97	61	81	153	153	150	150	150	150	150
Re-registrants											285	285	285	285	285	285	285	285
In-migrants											105	105	105	105	105	105	105	105
SUBTOTAL							557	654	417	437	516	543	543	540	540	540	540	540
Outs																		
Retirements						135	209	181	127	145	147	155	160	169	195	189	203	210
Short-term Leave						98	97	94	95	95	95	95	95	95	95	95	95	95
Leavers						416	513	456	372	303	300	390	390	390	390	390	390	390
SUBTOTAL						649	819	731	594	543	542	640	645	654	680	674	688	695
NET												-97	-102	-114	-140	-134	-148	-155

Scenario 3: Accounting for impacts of nursing initiatives in other provinces and implementation of HHRP recommendations

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Registered	9500	9746	9561	9759	10052	10067	9975	9810	9496	9339	9312	9350	9525	9513	9487	9493	9479	9472
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739							
In:																		
New Graduates						343	321	282	97	61	81	153	153	150	150	150	150	150
Re-registrants											285	285	285	285	285	285	285	285
In-migrants											105	105	105	105	105	105	105	105
SUBTOTAL							557	654	417	437	516	543	543	540	540	540	540	540
Outs																		
Retirements						135	209	181	127	145	147	155	160	169	195	189	203	210
Short-term Leave						98	97	94	95	95	95	95	95	95	95	95	95	95
Leavers						416	513	456	372	303	300	300	300	300	300	300	300	300
SUBTOTAL						649	819	731	594	543	542	325	330	339	365	359	373	380
NET												218	213	201	175	181	167	160
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739	8875	9011	9147	9283	9419	9555	9691
Employed in NS	8726	8996	8961	9052	9277	9325	9229	9024	8786	8752	8739	9711	9847	9983	10119	10255	10391	10527

## CHART

### **Licensed Practical Nurses Supply (Projected) versus Demand (Projected)**

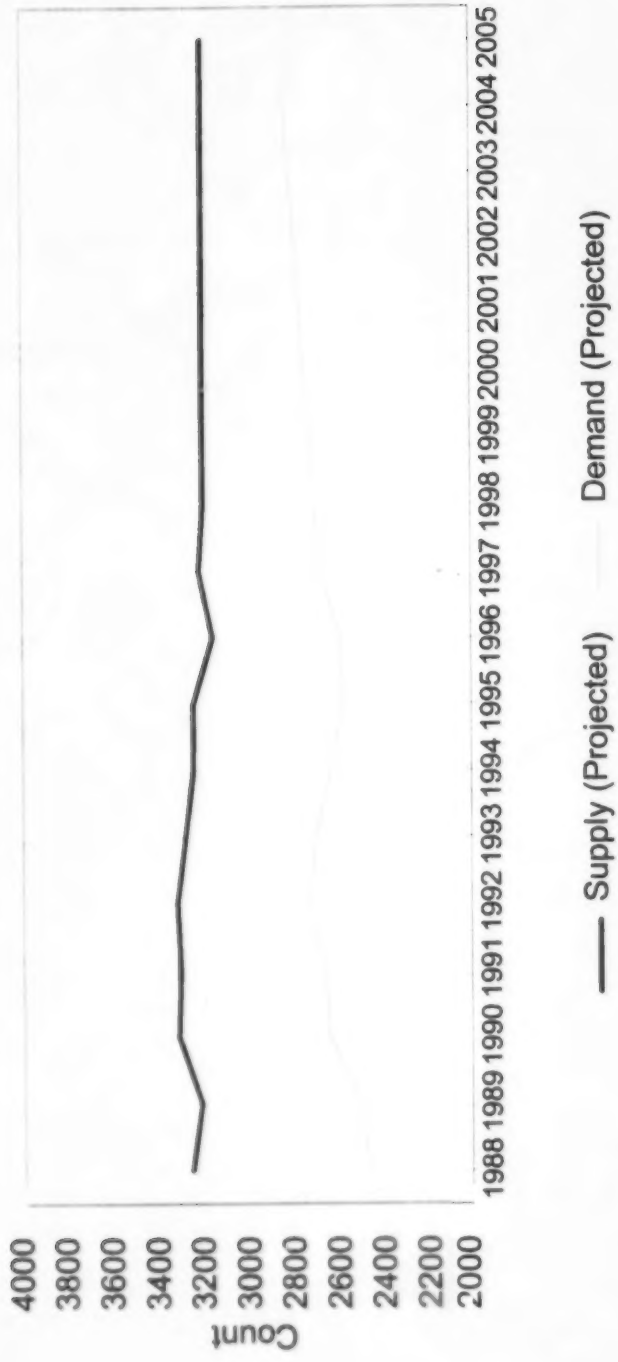
#### **Supply**

- Up to 1998, the top line (red) on the graph represents the number of Licensed Practical Nurses registered in Nova Scotia (regardless of employment status or place of residence);
- The red line projected beyond 1998 represents a projection of the status quo based on current employment and graduation patterns.

#### **Demand**

- Up to 1998, the bottom line (yellow) on the graph represents the number of Licensed Practical Nurses registered in Nova Scotia who are employed as an LPN;
- The yellow line projected beyond 1998 represents the number of LPNs employed in 1998, plus PHRU's projected demand for an additional 21 LPNs annually.

# LPN Supply (Projected) versus Demand (Projected)



Licensed Practical Nurses (LPNs)

1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
3264	3220	3316	3308	3320	3283	3248	3244	3160	3220	3200	3200	3200	3200	3200	3200	3200	3200
2476	2523	2653	2669	2738	2709	2645	2586	2593	2686	2707	2728	2749	2770	2791	2812	2833	2854

## **Appendix E**

### **Staff Mix**

## SETTING THE CONTEXT

The current Canadian health care system has recently been undergoing rapid, if not dramatic, changes in response to declining fiscal resources and a desire to improve the quality of health care delivered. Downsizing, rightsizing, restructuring, and more recently, re-engineering efforts have been implemented by health care administrators in an effort to respond appropriately to this changing environment. As workplace processes are re-engineered to improve the efficiency, effectiveness, and quality of the deliverables, institutions and administrators have also been exploring and considering various ways to deliver patient care. One possible option currently being examined and considered throughout the United States and Canada is the introduction and implementation of various staff mix models. The introduction of staff mix models is not entirely foreign to most health care organizations. A nursing shortage during the 1980s resulted in the emergence and integration of 'nurse extenders' into the hospital setting whose primary purpose was to provide the RN with complementary nursing support which provided the RN with more or 'extended' time for direct patient care.

Without doubt, the internal hospital environment has increased in complexity since the 1980s. The desire to deliver improved quality health care more efficiently and effectively coupled with a rapid technological advances, increased client (patient) expectations, older patients with greater acuity, and shorter length of stay has resulted in expanded roles and new challenges for RNs of the 1990s.

The purpose of this report is threefold. First, to explore the concept of staff mix; second, to highlight the key findings from the literature; and third, to present recommendations for consideration.

## SCOPE AND LIMITATIONS

There is a growing body of literature examining the implications of staff mix models-this is a burgeoning field of study. There were, however, a number of notable limitations to the literature reviewed. There were information gaps (the authors did not always reveal the staff mix configuration used in the study) and notable inconsistencies<sup>1</sup> (the term staff mix was used, at times, interchangeably with the terms skill mix or multi-skilling) within literature surveyed. In addition, there was limited statistical evidence describing the long-

---

<sup>1</sup> Aiken, Smith, & Lake's (1994), Lower Medicare Mortality Among a Set of Hospitals Known for Good Nursing has been most referenced article, from both sides of the debate, on the subject of staff mix and patient mortality. It was observed that a number of articles used only a portion of their findings to suggest a high RN ratio results in lower patient mortality. However, these articles revealed only a part of the discussion. In the end, Aiken et al. (1994) concluded that mortality is not simply an issue of the number of nurses, or their mix of credentials and therefore, is not the sole explanation for a lower mortality (p. 783).



range impacts of implementing staff mix models into the health care system. Consequently, at this point in time there appears to be no conclusive evidence to support or refute one side or the other. While every effort was made to present a balanced report, time constraints and a limited literature research, implies that the key findings should be viewed with a degree of caution. Clearly, more evidence-based research on this vital issue is required and advised.

## **BACKGROUND**

The literature reviewed included a selection of American and Canadian (1994-1999) journal articles as well as reports prepared by: The Alberta Association of Registered Nurses, The College of Nurses of Ontario, The QEII Health Sciences Center: 1996 Nursing Liaison Committee Report, and The Marsh Report, 1999. The literature indicated a growing awareness of staff mix models as a potential method for hospital administrators to manage the increasing external and internal pressures (rising costs, changing demographics, organizational restructuring) being leveled against the health care organization. Two very distinct opinions emerged from the literature - those who endorsed the use of staff mix models and those who expressed concern over its use (misuse) within the current health care system. This is a highly controversial and complex subject, with those on both sides of the debate presenting compelling arguments.

### **Staff Mix Models**

There are a number of definitions of staff mix viewed throughout the literature. For the purposes of this discussion staff mix is defined as "the combination or grouping of different categories of workers that is employed for the provision of care to patients (McGillis Hall, 1997, p.31)". A unit with 100% RN staff would be one example of a staff mix. Other staff mix may include combinations of RNs, licenced practical nurses (LPNs), health care aides, nurse aides, unlicenced assistive personnel (UAP), and multi-skilled workers.

Staff mix models are intended to be an element of health human resource planning where the overall goal is to attain the most effective, flexible, and cost-effective use of health care personnel (McGillis Hall, 1997). The literature presents staff mix models in a wide variety of ways. McGillis Hall (1997) contends that staff mix models can be divided into two groups based on their relationship to the nursing role; complementary models (support staff for RNs usually performing non-nursing tasks) and substitution models (support staff which may perform some nursing care traditionally provided by other health care professionals). Additional models cited throughout the literature included the following: team-based nursing, partnership models, patient-care models, and multi-disciplinary teams. The limitations from these findings are obvious. Without a standardized and universally accepted definition of a staff mix model, it is difficult to draw any conclusions or make comparisons from the literature. This sentiment was echoed throughout the literature. Notwithstanding, there is value in the lessons learned and insights which can be gleaned

from those hospitals and staff which have, or are considering implementing a staff mix initiative.

## **KEY FINDINGS**

This section presents the key issues, as reflected in the literature, from both sides of the staff mix debate. While many issues were discussed throughout the literature, the key issues appeared to fall under the following four headings: quality of patient care; role enhancement/job satisfaction; delegation and liability; and, health care costs. Each key issue is discussed in terms of how it is impacted (opportunities and threats) by the introduction and implementation of staff mix.

### **The Quality of Patient Care**

Will the quality of patient care be improved or conversely, negatively impacted by staff mix? The literature suggests we simply don't know. It depends on the hospital, on the acuity of the patients, on the training and expertise of the staff, and the staff mix configuration. In spite of these limitations, there was substantial discussion throughout the literature regarding the quality impact of staff mix.

The literature supporting staff mix models state that appropriate models can provide an opportunity for improved quality in patient care. Delegating non-nursing responsibilities has been reported to allow the RN more time to deliver the activities requiring greater knowledge and expertise such as: direct patient care, patient and family education and support, and collaboration with the physicians (Friesen, 1996; Grillo-Peck & Risner, 1995; Ventura, 1999; Davis, 1994).

On the other hand, the principal threat reiterated throughout the literature was that a staff mix will result in a decrease in the quality of patient care. A staff mix which reduces the number of RN care givers will return patient care to a "task-based" model which concentrates on skills and tasks rather than the cognitive and conceptual practices or knowledge of nursing (McGillis Hall 1997, p.37). It has been suggested that the effects of this shift or "de-skilling" would result in delegating a portion of this 'caring process' to individuals who do not possess the knowledge about human experience, illness, health or the quality of life therefore, negatively affecting the continuity and quality of care being delivered (Mitchell, Bernardo, Bournes, 1996; McCloskey, Bulechek, Moorhead & Daley, 1996). This is further supported by the CNA (1995) policy statement which submits, "If aspects of care are performed apart from the nursing process, inaccuracy in making critical observations may result, leading to unnecessary pain and suffering...delays or errors in responding to the clients changing health care needs increase both the potential for complications and the cost of treatment to address complications (p.1)".

Findings in the 1999 Marsh Report revealed that Nova Scotia nurses are primarily concerned that inappropriate staffing strategies, perceived as being initiated by cost

constraint, are fragmenting service delivery. Further, they feel strongly that patient care requirements, determined from a holistic perspective must be the primary factor in deciding how resources are allocated. In addition, there have been concerns raised over the ability of less-skilled health care workers to provide quality care to high acuity patients. It has been argued this fact alone should deter the use of staff mix.

### **Role Enhancement & Job Satisfaction**

Role enhancement and job satisfaction, as they relate to the issue of staff mix, is another area debated throughout the literature. Will implementing staff mix models into the workplace result in role enhancement and increased job satisfaction? Those who suggest both roles and jobs would be enriched by staff mix claim RNs would have increased opportunities to supervise, mentor and coach other, less qualified, members of the care giving team (Marks , Dennis, Borozny & Ferron, 1999). This expanded role would result in more control over the coordination of patient care delivery. The literature also notes licenced practical nurses (LPNs) as well as other support personnel as having the opportunity to experience increased job enrichment as well as job satisfaction from the anticipated role expansion.

Those on the other side of the debate suggest introducing a staff mix model threatens and diminishes job roles and satisfaction, particularly for the RNs. This research concluded that RNs spending more time in a supervisory capacity, delegating, monitoring, educating, and evaluating results in decreased direct patient contact, decreased flexibility on the unit and increased workload (Melberg, 1997). In addition, the literature identifies the erosion or devaluing of RNs through their loss of identity, autonomy, power, and worst case, their jobs. In other words, there is concern by RNs that the health care system will begin to see RNs as expendable or easily replaced, therefore reducing the value of their contributions.

### **Delegation and Liability**

In addition, the literature reflects on the issue of delegation. When used in reference to registered nurses, delegation generally refers to giving authorization to someone else to carry out a task, while remaining accountable for the overall nursing care of a patient (Kucey, 1998, p.14). Marks et al. (1999) found that effective delegation results in opportunities for improvements in time management, efficiency, and overall quality of care delivery. However, the literature raises a number of questions concerning delegation. First, have the RNs been adequately educated to become skillful delegators - can they clearly communicate the request? Have the ancillary health care providers received adequate and appropriate training to safely complete the required functions and activities- is the right person being asked to perform the task? Have roles and responsibilities been clearly delineated - is the right task being performed by the right person? (Thomas & Hume, 1998; Kucey, 1999; Salmond, 1995; Phillips, 1997; King, 1995; CNO, 1996; QEII Nursing Liaison Report, 1996; Holzemer, 1996). To delegate effectively, the RN must feel confident the

ancillary health care provider is competently trained to safely administer the function or activity (CNA, 1995). If not, the effectiveness, efficiency, and quality of service delivery are threatened.

The question of liability is raised when an RN delegates a task to an ancillary health care provider. The RN delegating the task is not automatically responsible for the actions of the other party, but is accountable for the decision to delegate (Phillips, 1997). The ancillary health care provider is accountable for the performance of the delegated task and is required to act within the scope of practice and employment (Phillips, 1997, p.48). The RN, as the delegator, could be liable for negligence if the task is delegated to an individual not competent to perform it (Phillips, 1997). The literature advises hospitals to develop policies and procedures, and mechanisms for maintaining responsibility and accountability to guide the delegation processes to ensure competent staff delivers safe and timely patient care.

### **Health care costs**

Reduction of health care costs was the number one driver of staff mix cited throughout the literature. While there appears to be limited research on the effects of staff mix over the long term, short term cost considerations were discussed throughout the literature.

A number of articles revealed opportunities for cost savings as a direct result of staff mix. Some of the research examined included: McGillis Hall (1997) review of several US studies on complementary staff mix models; Grillo-Peck & Risner (1995) Partnership Model; and, Sunnybrook Hospital (1996) Professional Care Delivery Model. With the exception of Sunnybrook Hospital, which maintained a full RN complement, the other organizations decreased unit RNs between four and fifty percent. Financial savings were noted in every case. These savings resulted from a combination of lower human resource requirements, a decrease in overtime, an increase in productivity and efficiency, and a decrease in sick time. These results however should be viewed with caution. In some cases, there was very little detail in terms of other confounding factors such as patient acuity, quality or competency levels provided.

On the other hand, according to some of the literature reviewed, there is a potential threat that health care costs will increase due to implementing a staff mix. Shamian (1998) contends that costs extend well beyond calculating the difference in pay between a RN and ancillary health care personnel. Recruitment, training, and education costs of new personnel need to be considered. In addition, potential costs due to lower productivity, loss of experienced staff, increased length of patient stay, higher rates of illness complications (i.e. re-infection), increased absenteeism, increased supervision and overtime, and higher turnover must be studied (Shamian, 1998; Shindul-Rothschild, 1996). Less measurable variables such as the cost to the patients and nurses (quality, stress, satisfaction) have been also recommended for study.



## **CONCLUSION**

As mentioned previously, it is difficult to draw any definitive conclusions from the literature reviewed. The lack of long term study and statistical evidence leave many unanswered questions as to the efficacy of staff mix. However, the discussions noted above should be viewed as a point of departure, a place to begin the dialogue.

## **CRITICAL SUCCESS FACTORS**

As health care administrators and staff consider the implementation of staff mix, there are a number of critical success factors which were consistently mentioned throughout the literature. These are briefly described below:

1. Planning is an essential ingredient to the success of staff mix. It is critical that strategies are devised to clearly articulate the objectives/outcomes to be achieved through redesigning the care delivery model.
2. Role clarity for all staff (RN, LPN, UAP) is crucial. A lack of role clarity can lead to role ambiguity and role ambiguity can lead to poor performance (Crawley, Marshall, Till, 1993). Job descriptions, lines of authority and accountability must be clearly written to ensure continuity of care, patient safety, and quality are enhanced.
3. Staff mix must be designed and implemented based on: the needs (acuity) of the patient; the qualifications (education, professional experience, competencies) of the staff; and, the ability to deliver (and improve) quality patient care. No single model is appropriate in every situation.
4. Education is also a critical component to a successful staff mix. Staff, at all levels, require education. Some RNs may require training in the areas of delegation, supervision, conflict resolution, and communication. LPNs and UAPs may require additional professional education if their positions are expanded to include more complex, direct patient activities.
5. A period of transition or an adjustment time should be anticipated while all staff gain training, education, and team building skills. Support for staff, such as a change management initiative, should be employed.
6. Ongoing evaluation (i.e. cost-benefit, cost-effectiveness, quality and satisfaction), and assessment of the staff mix and its effects on financial, human resource, quality and patient care, is recommended throughout the literature. There are various staff mix models to consider, every model should be evaluated for its appropriateness to a particular client population, setting and resources. All relevant stakeholders, including the client, should be engaged in this evaluation process.

**Appendix F**

**Nursing Education Issues  
in Nova Scotia  
(June 1999)**



## INTRODUCTION

The Nova Scotia Department of Health currently funds the delivery of a number of nursing education programs. This funding supports formal nursing education programs at both the entry and post entry levels. In 1998, this education envelope accounted for slightly more than \$3 million allocated as non-portable funding to the QEII, Nova Scotia Hospital, IWK/Grace and St. Francis Xavier. Prior to 1994, the Department of Health also funded continuing education for nurses with an annual disbursement of \$40 - \$50 per full-time employee to each health care organization. Since that date, this budget was removed from the system and regions and non-designated organizations were challenged to find necessary continuing education funds within their allocated budget. It is interesting to note that since 1993, the Department of Health has decreased the resources allocated specifically to nursing education from \$7,275,000 to \$3,151,121; a 57% reduction (see Table 1).

## ENTRY LEVEL EDUCATION

In the late 1970's and 1980's, Nova Scotia was rich in the production of new registered nurses, particularly diploma graduates. That trend was soon to shift as the system responded to demands for significant reform in nursing education. In 1984 the Registered Nurses Association declared that by the year 2001, the minimum educational requirement for entry to the profession would be a baccalaureate degree in nursing. Ministerial reports and commissions were calling for significant action in relation to managing critical issues facing the nursing profession. According to the Royal Commission on Health Care (1989), of priority concern were issues related to the need for fundamental change in nursing education systems. Other issues related to requirements for human resource planning, worklife concerns, and needs for innovative nursing approaches to primary care specialization, etc. The stage had been set for significant and unprecedented education reform for the nursing profession.

In 1992, more than 330 registered nurses were being prepared annually for the Nova Scotia health system. Each year six (6) hospital-based diploma programs prepared 300 plus diploma graduates; two (2) baccalaureate programs prepared 60 plus graduates (see Table 2). The Department of Health contributed \$5.3 million annually to support the diploma nursing programs. In the early 90's there were concerns about an over supply of new graduates. Unemployment and underemployment of registered nurses and anticipated downsizing in the health system, accelerated plans to reduce nursing school enrollments. The profession's endorsement of the baccalaureate degree as requirement for entry to practice and fiscal constraint within government created a window of opportunity for enrollment reduction. A ministerial task force on nursing recommended government's endorsement of the RNANS position (July, 1993). This report suggested a gradual closure of diploma programs and an immediate increase to the baccalaureate programs. Government's response was swift with an immediate closure of all diploma programs in 1995. The result was an immediate and profound reduction of new graduates from 283 in 1995 to 78 in 1996 (see Table 2). University enrollment expansions were proposed to allow for annual graduation of 150 new graduates. Collaborative projects were

funded by the Department of Health to support university education through partnerships between Dalhousie University and the Queen Elizabeth II and Yarmouth Regional. Enrollment expansions were also approved for St. Francis Xavier (see Table 3). These commitments were quickly revised. Anticipated health reform and continued downsizing were perceived as predictors of decreased nursing human resource requirements. The result was a reduction in university enrollments. In 1996 the Dalhousie Metro project budget was cut and enrollment reduced by 40 learners (see Table 3).

In nine (9) years, the investment in basic nursing education for registered nurses in Nova Scotia had dropped remarkably by 56% from 333 new graduates in 1990 to approximately 143 in 1999 (see Table 2). For the period 1996-1998, the fact that an average of 76 nurses graduated per year compounded the impact of the reduction on the supply of registered nurses. The financial investment plummeted from \$5.3 million to \$2,468,121 (see Table 1).

The decline in enrollment to universities has been exacerbated by a notable increase in the numbers of new graduates who chose to leave Nova Scotia. Significant difficulties are being reported regarding the supply of new graduates available to rural areas where there are no nursing schools. Cape Breton, for example, reports serious difficulties recruiting new graduates. On the other hand, Western Region, who has a satellite nursing program of Dalhousie University on the Yarmouth site, report high success rates in retaining new graduates to the region. The continuing care sector reports a critical inability to attract new graduates. Long term care facilities suggest this situation is the result of nursing students not having exposure to clinical experiences in these facilities.

During a period of unstable funding, university schools of nursing have struggled with many complex challenges, one of the most difficult challenges being to meet enrollment quotas in an environment which is less than inviting to prospective candidates. Although applicant numbers for Nova Scotia university schools of nursing have remained relatively stable, Dalhousie University, for example, has not been successful in meeting enrollment quotas (see Table 3). Nursing programs are not attracting candidates who meet admission criteria. This situation is not unique to Nova Scotia. Sufficient numbers of highly qualified applicants are not choosing the nursing profession. The Canadian Nurses Association (June, 1998, p. 11) has reported that nursing has lost its appeal for many reasons including employment opportunities, increased job dissatisfaction, and competition with other career choices. Dalhousie University and St. Francis Xavier have identified learner recruitment as a priority concern requesting immediate Department of Health funding for related recruitment initiatives (correspondence B. Downe-Wambolt, January 29, 1999).

Curriculum and program delivery issues pose other complex challenges for the university nursing programs. Providing innovative curricula to address the nurses' role in a reformed system while balancing the competencies required to meet the health system's current demands is difficult and often conflicting. Nursing students have opportunity for exposure to selected clinical experiences which reflect only a sampling of the cadre of clinical roles available to them as new graduates. Advances in medicine and technology have

increased competency requirements around specialization and acute care. At the same time students are challenged to meet the unique and autonomous roles of nurses in primary care, long term care, home care and community sectors. Employers demand graduates be competent to practice in a broad range of practice roles. However, new graduates have limited opportunity for cultural integration and are expected to work often independently with minimal orientation. The result is often tension between the academic and service/practice sectors. The dichotomy continues. Employers expect "competent" professionals; educators expect "reasonable" support systems for new graduates.

Education issues for the licensed practical nurse parallel the history of the registered nurse in relation to decreased enrollment to programs. According to the Education Subcommittee of the Task Force on Nursing, in 1992 there were six (6) college programs which prepared approximately 202 licensed practical nurse graduates per year (July 1993, p. 86). By 1997, two (2) college campuses had been closed for an annual 35% reduction in graduate numbers to 132 (see Table 4). Enrollment reductions were implemented because of a reported high incidence of underemployment (LPNs working as personal care workers) and unemployment of LPNs). This employment pattern has persisted.

There appears to be regional differences in the supply/demand requirements for LPNs in Nova Scotia. Despite the fact that the province as a whole appears to prepare sufficient numbers of new graduates, the western and northern regions report serious shortages particularly in long term care. As a result new education programs are under consideration; a full-time program for Springhill and a part-time program for Truro. This projected expansion will no doubt contribute to a continued over-production of LPNs.

Education programs for LPNs have also responded to ongoing curriculum demands dictated by changes in the roles and competencies required by the health system. Student preceptorship programs have been initiated to support graduate integration to the work force. Providing clinical practice experiences to support the broad range of LPN roles also creates ongoing challenges particularly in the rural long term care sector (NSAHO Briefing Paper: Nursing Shortage in Continuing Care, Fall, 1998).

The Marsh Report (March,1999) reported interesting findings regarding nurses' perceptions of Nova Scotia's entry level nursing education programs . A recurring theme in the report was the perception of a disconnect between the expectations of nursing practice and nursing education programs at both the community college and university levels. Particular concern related to the lack of agreement and/or consultation between education programs and the practice environments regarding the clinical course requirements for RN and LPN learners. Clinical education and competence were reportedly devalued by the education sector. General concern was expressed regarding the clinical competence of new graduates and their faculty. Home care and long term care sectors perceive nursing students have minimal or no exposure to nursing practice in these specialties. These criticisms are raising serious concerns regarding the clinical competence of new graduates, particularly RN university graduates. The Marsh Report ( 1999) noted there was consensus among a large group of stakeholders that the university programs

must strengthen their clinical course requirements to ensure graduates exit as competent practitioners.

Learning environments provided in the nursing practice settings in many health sectors are reportedly negative environments for student learning (Marsh, March, 1999). Staff nurses perceive their teaching role as preceptors/mentors for nursing students as undervalued and lacking clarity or validation. Students perceive nurse preceptors as overworked and frustrated. Employers report preceptorship as an essential education support which is invisible in the system; i.e. unrecognized and unfunded.

## CONTINUING EDUCATION PROFESSIONAL SPECIALTY EDUCATION

The demand for nursing education for registered nurses to support clinical competence in a broad spectrum of specialties and advanced practice roles has increased significantly in recent years. Advances in technology, medical specialization and general increases in patient acuity have signaled the need for highly competent clinicians and education programs to support these practice requirements. Post RN specialty programs had been historically hospital based post diploma options. More recently, they reflect new education partnerships between universities and health care agencies for the delivery of clinical majors at both the baccalaureate and master's level. The Department of Health currently funds a number of post entry level education programs (see Table1).

The issue of post entry level education for nurses has been a source of extensive study in Nova Scotia since the report of the ministerial task force on nursing (see Appendix A). These reports suggested the need for new models and delivery systems to support the continuing professional education needs of registered nurses. Many of these reports have called for new education systems which ensure relevant, accessible education for all nurses in all regions; education which ultimately supports improved health outcomes for Nova Scotians. There have been repeated recommendations related to the need for co-operative, co-ordinated education planning and delivery through new partnerships in order to optimize the use of shrinking available resources. Models and infrastructures have been proposed to address the unique education issues related to post entry level education (Department of Health, December 1994).

Many education partnerships have emerged between the Nova Scotia Department of Health, health agencies and universities for the delivery of post entry level education. These partnerships have supported specialty practice in areas such as perinatal, mental health, critical care, perioperative and continuing care nursing. Funding for these projects appears to be related to immediate crises for nursing human resources occurring in specific sectors. For example, in anticipation of increased nursing positions in continuing care, St. Francis Xavier received funding to provide a related education option within the post RN stream. Nurses were quick to respond. Anxious for the proposed employment opportunities in this area, more than 300 applicants were received for the 100 seats. Interest quickly waned when graduates of the program could not secure employment in this



specialty area. The expectation had been that bed closures in acute care would result in newly funded positions in home care and long term care. Health system reform did not occur as quickly as anticipated. Despite growth in the continuing care sector, demand for nurses did not appear to grow proportionately and funding for this specialty program was discontinued.

Demand for specialty education to support acute care nursing in the areas of critical care and perioperative remained relatively stable. However, recent shortages of critical care nurses necessitated crisis responses at the QEII and Dartmouth General who were forced to provide special on-site programs to meet crisis shortage of nurses in this area. The crisis situation in critical care and shortages of qualified emergency room and perioperative nurses resulted in an extensive review by the Department of Health. Recommendations and business plans are currently under review to establish education strategies to meet immediate and long term anticipated shortages. Details of funding implications will be considered by the Department of Health in June 1999.

Interest in maintaining specialty education to support perinatal education remains strong. A proposal for continued funding from the partners who currently deliver the Perinatal Education Project has been received by the Department of Health. As well, Dalhousie University and the QEII have announced a proposal is being drafted to jointly deliver clinical majors in critical care, emergency, and perioperative nursing. There is reportedly also an emerging need for formal programs in oncology and gerontology nursing.

The Task Force on Nursing (July 1993) had recommended an increase in funding to support nurses in advanced practice roles. In response to current and future system demands for nursing human resources, Dalhousie University has introduced programs at the graduate level to support nurses in advanced practice roles in neonatal and acute care nursing. As well, a nurse practitioner program will be introduced at the baccalaureate level in the fall of 1999.

The demand for university education programs to support specialty and advanced practice roles in nursing will likely continue to be a major growth area. The mean age of nurses in administration, education and specialty areas such as perioperative nursing is well above the provincial mean. Organizations, such as the QEII are reporting shortages of operating room nurses leading to concerns about operating room scheduling. Universities across North America are experiencing difficulties recruiting doctorally prepared faculty. Demand for education will no doubt balloon as the baby boom nursing workforce ages.

## ORIENTATION AND ONGOING STAFF DEVELOPMENT

Lack of resources and access to orientation and ongoing staff development programs are long standing problems for the front line nurse. Restructuring, downsizing, and increased patient acuity have reportedly exasperated the problem. The limited education opportunities which are available are primarily reserved for registered nurses. Licensed

practical nurses report virtually no support or funding for continuing education activities to support their ongoing practice requirements.

As the health system becomes more and more complex the need for accessible funding and organizational support for a wide range of nursing education opportunities will be essential. The system expects recent graduates and experienced nurses who change their place of employment to commence their roles as relatively independent autonomous practitioners with minimal or no time for orientation and integration to the workplace. Nurses at all levels report concern regarding their capacity to adequately address their patient needs and meet employers' expectations with limited opportunities for development.

Prior to 1993, the Department of Health provided \$1.5 million funding for continuing education for nurses. When this money was removed, the regions and non-designated organizations were challenged to find the baseline resources necessary to support even the most essential continuing education requirements. This situation occurred at a time when restructuring, downsizing and patient acuity levels (in all sectors) began to accelerate the demand for a well qualified, flexible, clinically competent workforce.

Recognizing education concerns related to access and regional disparity, the RNANS and Department of Health have collaborated on the implementation of continuing nursing education through the Telehealth Program. Currently, the program supports education in the eastern and western regions and targets the registered nurse; programs are not designed to address the education requirements of LPNs.



**NEW REGISTERED NURSE GRADUATES FROM  
NOVA SCOTIA SCHOOLS OF NURSING  
1990-1999**

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**TABLE 1**

**DIPLOMA SCHOOLS**

YEAR	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
TOTAL	267	267	255	265	247	213	-	-	-	-

**BACCALAUREATE SCHOOLS**

DALHOUSIE	40	40	47	36	52	42	60	43	53	83
ST. FRANCIS XAVIER	26	26	29	26	24	28	28	21	33	60
TOTAL	66	65	76	62	76	70	78	64	86	143
GRAND TOTAL	333	332	331	327	323	283	78	64	86	143

**UNIVERSITY SCHOOLS OF NURSING  
PROGRAM PROFILES  
1994-1999**

**TABLE 2**

**APPLICANT NUMBERS**

	1994	1995	1996	1997	1998	1999
<b>DALHOUSIE</b>	248	95	96	97	98	
<b>ST. FRANCIS XAVIER</b>	Not Avail	145	137	139	138	

**PROGRAM CAPACITY**

<b>DALHOUSIE UNIVERSITY</b>	1994	1995	1996	1997	1998	1999
<b># of seats funded by Dept. of Health</b>						
Metro Campus	-	85	45	45	45	45
Yarmouth Campus	-	25	20	20	20	20
<b>Total</b>	-	110	65	65	65	65
<b># of students funded by Dept. of Education</b>	70	70	70	70	70	70
<b>GRAND TOTAL</b>	<b>70</b>	<b>180</b>	<b>135</b>	<b>135</b>	<b>135</b>	<b>135</b>

<b>ST. FRANCIS XAVIER</b>	1994	1995	1996	1997	1998	1999
<b># of seats funded by Dept. of Health</b>	-	35	35	35	35	35
<b># of students funded by Dept. of Education</b>	40	40	40	40	40	40
<b>GRAND TOTAL</b>	<b>40</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>75</b>

	1994	1995	1996	1997	1998	1999
<b>TOTAL NURSING ENROLLMENT CAPACITY</b>	110	255	210	205	205	205

UNIVERSITY SCHOOLS OF NURSING  
PROGRAM PROFILES CONTD.

**ACTUAL ENROLLMENT**  
**1994-1999**

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<b>DALHOUSIE UNIVERSITY</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
Metro Campus	70	114	103	113	95	
Yarmouth Campus	-	10	7	13	12	
<b>Total</b>	<b>70</b>	<b>124</b>	<b>110</b>	<b>126</b>	<b>107</b>	
<b>ST. FRANCIS XAVIER</b>	Not Avail	77	75	74	80	
<b>TOTAL ACTUAL ENROLLMENTS</b>	<b>-</b>	<b>201</b>	<b>185</b>	<b>200</b>	<b>187</b>	

# NOVA SCOTIA DEPARTMENT OF HEALTH FUNDING FOR NURSING EDUCATION

TABLE 3

NURSING EDUCATION PROGRAMS		1993	1996	1998
Basic Nursing Education	• Diploma Programs	• \$5,325,000	• Nil	• Nil
	• Dalhousie University Collaborative Projects	- Nil	- \$1,350,000	\$1,130,000
	- Metro	- Nil		590,000
	• Yarmouth	• Nil		748,121
	• St. Francis Xavier			
		5,325,000	2,365,135	2,468,121
Post Entry Level Nursing Education	• Dalhousie/Grace IWK Perinatal Education Project	• Nil	361,000	230,000
	• St. Francis Xavier Continuing Care	• Nil	92,584	Nil
	• Dal/NS Hospital	• \$60,000 + faculty	58,000	58,000
	• Psychiatric Mental Health	• \$330,000	330,000	330,000
	• Queen Elizabeth II Critical Care Program	• \$ <u>60,000</u>	65,000	65,000
	• Perioperative Program			
		450,000	906,584	683,000
Continuing Nursing Education	\$40 - \$55 per full time equivalent per year	\$50 x Funded FTE's = \$1,500,000	Nil	
	Total	\$7,275,000	\$3,271,719	3,151,121

**EDUCATION PROGRAMS  
LICENSED PRACTICAL NURSE**

**PROGRAM PROFILES**

**APPLICANT NUMBERS**

**TABLE 4**

	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
Akerley Campus (Dartmouth)	323	307	246	182	208	N/A
Lunenburg Campus	128	80	75	94	79	80
Marconi Campus (Sydney)	280	216	239	195	191	N/A
Buridge Campus (Yarmouth)	70	71	74	65	89	N/A

**PROGRAM CAPACITY**

	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
Akerley Campus (Dartmouth)	90	90	60	60	75	N/A
Lunenburg Campus	30	30	30	30	30	30
Marconi Campus (Sydney)	33	33	33	30	30	N/A
Buridge Campus (Yarmouth)	30	30	30	30	30	N/A

	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>
<b>TOTAL ENROLLMENT CAPACITY FOR LPN STUDENTS</b>	183	183	153	150	165	N/A

**EDUCATION PROGRAMS  
LICENSED PRACTICAL NURSE  
PROGRAM PROFILES**

**ACTUAL ENROLLMENTS**

	1994	1995	1996	1997	1998	1999
Akerley Campus (Dartmouth)	87	86	60	60	75	
Lunenburg Campus	26	28	25	34	26	
Marconi Campus (Sydney)	33	50	45	33	30	
Buridge Campus (Yarmouth)	28	29	31	30	30	

	1994	1995	1996	1997	1998	1999
<b>TOTAL ACTUAL ENROLLMENT OF LPN STUDENTS</b>	174	193	161	157	161	

**GRADUATE NUMBERS**

	1994	1995	1996	1997	1998	1999
Akerley Campus (Dartmouth)	73	74	75	53	N/A	N/A
Lunenburg Campus	15	19	18	27	23	29
Marconi Campus (Sydney)	31	47	38	28	30	N/A
Buridge Campus (Yarmouth)	24	25	20	24	N/A	N/A

	1994	1995	1996	1997	1998	1999
<b>TOTAL GRADUATE NUMBERS FROM LPN PROGRAMS</b>	143	165	151	132		



## **APPENDIX A**

### **INTERNAL DEPARTMENT OF HEALTH DOCUMENTS/REPORTS ON NURSING EDUCATION**

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- Cassin, A. M. (1993). Issues in Nursing: Practicing and Governing the Commitments to Care. (A paper prepared for the Nova Scotia Task Force on Nursing) Halifax: Department of Health.
- Nova Scotia Department of Health, Challenges for Change in Health Care: Nursing in Nova Scotia, Vol. 1, The Summary Report; July 1993.
- Nova Scotia Department of Health, Challenges for Change in Health Care: Nursing in Nova Scotia, Vol. 2, The Education Subcommittee Report, July 1993.
- Nova Scotia Department of Health, Challenges for Change in Health Care: Nursing in Nova Scotia, Vol. 3, The Professional Worklife Issues Subcommittee Report, July 1993.
- Nova Scotia Department of Health, Challenges for Change in Health Care: Nursing in Nova Scotia, Vol. 4, The Human Resources Subcommittee Report, July 1993.
- Nova Scotia Department of Health, Final Report of Nursing Education Working Group, July 1994.
- Nova Scotia Department of Health, Report on Post Entry Level Nursing Education in Nova Scotia, December 1994.
- Nova Scotia Department of Health, Final Report: The Minister's Working Group on Nurse Clinicians, September 1996.
- Nova Scotia Department of Health, Code Blue: Critical Care Nursing in Nova Scotia, June 1998.
- Nova Scotia Department of Health, Integrating Palliative Care in Nova Scotia: Discussion Document, June 1998.
- Nova Scotia Department of Health, Recommendations and Standards for the Management of Emergency Health Care Facilities in Nova Scotia, July 1998.

## **Appendix G**

### **Recruitment and Retention**

## **INTRODUCTION**

Currently, the Canadian health care system is attempting to unravel and understand the factors which have been contributing to the threat of a pending nursing shortage. Internal influences such as health care reform and hospital restructuring, work life issues, and deployment concerns are currently interacting with external influences such as demographic shifts (aging population), decreasing supply of nurses, increased out-migration of nurses, and declining enrollment in nursing education programs. This has resulted in the emergence of a complex, if not ill-defined, issue. Whether or not the current gap between supply and demand for nurses (RN, LPN) is due to supply shortage, a matter of ineffective deployment within the system, or an insufficient surplus, recruitment and retention strategies are critical components in successfully addressing the issues.

Retention strategies focus on creating conditions required to maintain the existing workforce, while recruitment strategies address the need to increase the supply of the current workforce. Many countries, including Canada, tend to react to shortages in supply by increasing their recruitment efforts, however, several studies suggest that improving retention is the crucial component to avoid shortages in the long run. Kazanjian (1993) states, "when retention is not considered a problem any longer can shortages then be attributed to insufficient production of trained personnel (p.75)." The CNA (1998) report supports this view by purporting, "with the appropriate incentives, it is far easier to keep happy employees than to attempt to re-recruit individuals who left because of dissatisfaction with their nursing careers (p.17)." In other words, once the conditions exist (e.g., improved work life) which encourages increased retention, recruitment would be an effective and reasonable supporting step to any outstanding shortage.

The purpose of this report is twofold. First, to examine the recruitment and retention issues currently facing the nursing profession, with particular emphasis on the Nova Scotia health care system and second, to present recommendations for consideration.

## **SCOPE AND LIMITATIONS**

There has been a plethora of literature written since the 1980s on the recruitment and retention of nurses. However, the issues related to recruitment and retention are complex and due to time limitation, could not be covered in the depth they deserve. Therefore, a high level view of the most relevant material has been presented for consideration and results should be viewed within this context.

## **BACKGROUND: Recruitment and Retention in Nursing**

Ryten (1997) projects in Canada, a nursing shortage of between 59,000 and 113,000 nurses by the year 2011. This need, according to Ryten, is solely caused by an aging population. Consequently, there is a sense of urgency to determine exactly why experienced nurses are leaving the health care system and why declining numbers of new nurses are choosing to enter the system. As mentioned, there are no single or simple answers to these questions - there are many factors which affect a person's decision to enter or exit the nursing profession. However, the literature identifies a number of critical internal and external factors which have directly influenced the recruitment and retention of nurses within the Canadian health care setting. They are briefly described below:

### **Internal Factors**

#### ***Health Reform and Health Care Restructuring***

The Canadian health care system has been undergoing extensive restructuring, while at the same time, experiencing rapid technological advancement. Ryten (1997) reports that between fiscal 1986/87 and fiscal 1994/95, the number of public hospitals was reduced by 14% and the number of approved beds in these hospitals declined by 11% (p.10). This has resulted in not only radical changes in the way health care services are delivered, but also in role changes for health care providers.

Ryten (1997) reported a steady decline in RN employment since 1971. Between 1966 and 1971, RN employment increased by 36%. However, between 1976 and 1981 growth declined to 14% and between 1986 and 1991 employed RN growth slowed to 11%. Between 1991 to 1996, the overall full time employment growth was 0%, which represented a -6.3% growth in full time jobs and a 9.4% in part time (p.9).

During this time period Ryten (1997) notes an increase in part-time employment for nurses. By 1996, there were 143 part-time nurses for every 100 there had been in 1985 (Ryten, 1997, p.8). These figures confirm that while full time employment opportunities for RNs have declined, part time and casual employment positions have increased.

These trends would naturally have an effect on the distribution or employment patterns of registered nurses. Ryten (1997) reports a steady decline in the number of nurses employed by hospitals. In 1985, three-quarters of all employed nurses worked in hospitals. This figure dropped to 65% in 1996, while the number of nurses employed in nursing homes (homes for the aged) increased from 6.7% in 1985 to 12.4% in 1996 (Ryten, 1997, p10).

#### ***Demographic Influences***

Presently, registered nurses comprise the largest single group of care providers in the health services delivery in Canada (CNA, 1998, p.2). The nursing profession was and

continues to be a female dominated occupation with only limited evidence suggesting the profession is evolving to include more men (Ryten, 1997). Ryten (1997) has stated that only four in every one hundred employed nurses across Canada were men (p.9). Unfortunately, as the nursing profession becomes less appealing as a career choice, due to negative perceptions, it is less likely to have success in recruiting male candidates which have, to date, rarely considered nursing a viable career option.

The second demographic influence examines the age trends of RNs. According to Ryten, the age composition of the existing nurse workforce offers an opportunity to predict a great deal about future replacement requirements, the rate at which the nursing profession is renewing itself (p.12). Ryten (1997) examined the age composition of working nurses from 1966 to 1996. The findings revealed a significant shift in the age structure of working RNs. Ryten (1997) states, "the nursing workforce was so much older in 1996 than in 1966 that only 25% of nurses were less than 35 in 1996 compared with 54% in 1966(p.12)". Currently the average age of a registered nurse in Canada is 47 (Ryten 1997).

### ***Environment (Work life)***

The CNA (1998) Discussion Paper cites work conditions as the single most important determinant in recruiting and retaining nurses. Work conditions encompasses a number of components such as participation in decision making, management support, professional autonomy, and job satisfaction (CNA,1998). Of these components, the literature cites job satisfaction as the most critical (Skelton-Green,1996). Job design job stress, professional development, job security, autonomy, and financial considerations all influence job satisfaction, and therefore the potential for retaining professional nurses (West & Rushton 1986; Mann & Jefferson, 1988; Curran & Miller, 1990; CNA 1998; Skelton-Green, 1996). These factors coupled with reduced employment opportunities and competition with other career choices, are viewed by many as responsible for reduced entry and increased exit from the profession (CNA, 1998).

## **External Factors**

### ***Nursing Education***

Has the nursing profession lost its appeal? The CNA (1998) Discussion Report suggests the declining enrolment in nursing education programs is an indication that indeed, nursing has lost some of its appeal. Factors such as, reduced future employment opportunities for new graduates, limited financial incentives, job design (casual and shift work), limited professional development opportunities, and greater career choices with higher earning potential, have contributed to the declining enrolment in nursing education programs (CNA, 1998; Ryten, 1997).



## **Government Responsibilities**

There has been a degree of concern expressed by many within the health profession, that government has not dedicated sufficient resources to the issue of health human resource planning - specifically for the nursing sector. Essentially, there has been a lack of leadership and commitment. The result is, according to many, a pending nursing shortage across the country. Recently however, governments (federal, provincial) have started to articulate commitment through significant financial investment in health and health care providers.

## **THE CONSEQUENCES**

There can be negative consequences which result from the inability to successfully recruit and retain qualified nursing staff. An environment which stifles growth and professional development will not only cause job dissatisfaction and potential exit from the profession, but also is likely to increase hospital costs and decrease the quality of patient care being delivered (Hinshaw, Smeltzer & Atwood, 1987). The literature highlights declining quality of patient care (due to a loss in continuity of care) and increasing direct and indirect hospital costs as particular areas impacted by the inability to recruit and retain registered nurses (Jones, 1990; Hinshaw et al., 1987; Shanahan, 1993; CNA, 1998). Direct costs to the hospital include those costs incurred as a result of the need to advertise, recruit, train, and orient new staff, as well as overtime and outsourcing costs of casual staff. Shanahan (1993) suggests health care environments where the nursing staff are understaffed, overworked, and in some cases fragmented due to the increase use of casual staff, can result in a decrease in morale and productivity which can negatively effect the quality of patient care delivered.

Indirect costs which will impact the entire health care system include, but are not limited to, costs associated with decreased productivity and increased absenteeism, decreased patient satisfaction, and decreased staff satisfaction (Shanahan, 1993). Further, Shanahan (1993) notes there can be lost opportunities for long range planning if efforts remain focused on simply stabilizing day to day operations.

## **THE NOVA SCOTIA CONTEXT**

Nova Scotia's Health status rates poorly compared to the rest of Canada. Of the ten provinces, Nova Scotia has the third lowest life expectancy, lowest rate Comprehensive Health Status, highest percentage of population reporting an activity limitation, third highest death rate, and second lowest percentage of population reporting excellent self-rated health. In addition, between 1996-1997 acuity increased by 2.7% in acute care, ambulatory visits increased 5-8% annually, and length of stay decreased from 9.4 days in 1992/93 to 8.2 days in 1997/98. Consequently, the demand for RNs is increasing in acute care due to acuity, and in long term and home care due to decreased length of stay.



Further, data from HHRP (1999) Data Base revealed the following statistics:

- In Nova Scotia, between 1993 and 1998 the number of RNs employed in nursing declined by 6.6% (approximately 600 nurses) compared to a national decrease of 3.4%. During the same period the number of casual registered nurses has increased from 20% to 23% of the RN workforce.
- In 1998 the mean age for RNs in Nova Scotia was 41.5 years, with 22% over the age of 50 years. The mean age for LPNs in 1998 was 40 years of age. In 1998, 19% of LPNs were over 50 years.
- Enrollment in university nursing schools have decreased by almost 50% since 1992/93. Currently, there is no funding for orientation of new graduates or nurses who are moving into speciality positions. In 1998, one-third of the fourth years students indicated they expected to leave Nova Scotia to seek employment

As previously mentioned, governments are beginning to allocate funds specifically for the nursing sector. Those provinces are now beginning to recruit nurses from across Canada, including Nova Scotia, in efforts to increase their nursing complement. In addition, many American states are experiencing a nursing shortage and continue to successfully recruit Nova Scotian nurses with rich incentive packages. For example, Montana is offering \$5,000 US signing bonuses with a starting rate of \$20 per hour US. In some cases relocation expenses and tuition reimbursements are also offered. This could be problematic for Nova Scotia, particularly the re-recruitment of nurses due to increased competition. New graduates would also consider leaving the province if a full time position became available elsewhere.

Finally, recruitment and retention continue to be demanding in both the long term and come care sectors, despite the recent efforts to improve wages. These sectors are challenged to manage the high incidence of staff (RN and LPN) vacancies, increased patient acuity, and the under employment of LPNs. The fact that many of these vital services are often delivered in remote and rural communities only compounds the difficulties in recruitment and retention.

Nova Scotia is facing many of the same trends as other provinces across Canada. Aging population, geographic disparity, increasing patient acuity, declining enrollments in nursing school, casualization of work, out-migration of new graduates are creating tremendous challenges not only for Nova Scotia, but for the entire health care system.

## **What The Nurses in Nova Scotia Are Telling Us**

Feedback from the focus groups delivered the following results (Marsh, 1999):

### ***We'll know we have it right when.....***

- The role of casual employment is no longer a disincentive;
- The number of permanent, full time positions has been increased to reflect an acceptable, newly defined role for casual employment
- Nurses' overall quality of work life facilitates staying in the profession;
- New graduates are happy with the help they've received in transition to the workplace;
- Remuneration reflects parity across sectors;
- Educational programs make seamless and sequential progression from entry to advanced levels;
- Employers and educational institutional support career progression through continuing education.

### ***And therefore...***

- Fewer new graduates and experienced nurses leave Nova Scotia for employment in other jurisdictions;
- More nurses return to Nova Scotia, return from retirement, and are available to work in under-served areas;
- More prospective students are applying for positions than the number of seats available in nursing programs (implying a higher quality pool of applicants);
- Practitioner mix reflects a balance of youth, experience, maturity and creativity;
- Nurses stay in their chosen practice setting (e.g. long term care)
- Nurses share positive feeling about their nursing practice and the quality of care they provide

## **RECRUITMENT AND RETENTION STRATEGIES**

The literature suggests that while, there is no single model or formula which leads to effective recruitment and retention of nurses, individual, site specific strategies can be implemented at both the micro and macro levels. Strategies such as salary and monetary initiatives, while offering very tangible benefits, do not contribute to improvement of job satisfaction in the long term (Shanahan, 1993). In general, the literature indicates the most successful recruitment and retention strategies offer intangible or environmental benefits which are specifically designed to improve job satisfaction (Shanahan, 1993; Klemm, Schreiber, 1992; Skelton-Green, 1996). These strategies would involve introducing such initiatives as the following: creating a autonomous practice environment through increased participation in decision making; shift rotations and scheduling flexibility; staff

communication; continuing education opportunities and tuition reimbursement, nursing leadership and management support. Furthermore, proper orientation and mentor programs particularly for new graduates, are essential. (CNA, 1998; Shanahan, 1993; Trinosky-Lind, 1988; Skeleton-Green, 1996; Mann & Jefferson, 1988; Jones, 1990). It is critical that strategies are developed and implemented which both stabilize the current workforce (retention) which enlarging and expanding the current pool of applicants (recruitment).

### **Retention Strategies**

Research revealed that while recruitment is a critical component, it is the development of successful retention strategies which will both stabilize the current workforce and improve the future nursing supply. Retention strategies generally fall into one of the following five categories: integration of new nurses; address staffing and workload issues; promotion of autonomy; support for advancement; and, compensation issues (CNA 1998; Hinshaw et al., 1987). Increased retention offers both macro and micro level benefits. At the macro level, it contributes to the maintenance of existing supply. At the micro level, it contributes to reduced staff turnover, lowered replacement costs, and maintenance or improvements in standards of care (CNA, 1998).

### **Recruitment Strategies**

Recruitment (into the profession) and re-recruitment (back into the nursing profession) are the two principles which are considered crucial components of the recruitment strategy (CNA, 1998). While "recruiting" nurses from one organization to another is generally seen as a recruitment strategy, it does not increase the overall number of nurses available within the system, and therefore, is not considered an optimum recruitment solution.

The CNA (1998) recommends that recruitment be an immediate and major focus for all key stakeholders with the development of plans aimed at increasing the current supply of nurses. Further, steps must be taken to encourage individuals who have left the nursing profession to return and remain in a lifelong rewarding nursing career. Specifically, the CNA (1998) recommends that strategies designed to recruit more students to entry level nursing education programs and recruit qualified nurses back into active practice be immediately initiated (p. 12). Finally, the CNA (1998) suggests that successful recruitment strategies will only be realized when causalization is eliminated, the working conditions are improved, family friendly policies are adopted and continuing education opportunities are made available.

## SUMMARY REMARKS

Clearly, the issue of recruitment and retention within the health care environment is complex and multi-faceted. Notwithstanding, it is a lynchpin to a thriving health care environment. The development and implementation of a successful recruitment and retention strategy must be a collaborative effort involving all key stakeholders and must be tailored to the needs of individual organization/association and developed from an integrated provincial health human resource plan.

Specifically, the retention strategies must address the work life issues viewed most critical by the key stakeholders, while recruitment strategies designed to improve current nursing supply are implemented. The consequences of not addressing this issue are severe - the costs to the entire health care system could be enormous.

## **Appendix H**

### **Re-recruitment Survey**

## **Introduction**

Recent trends indicate that the province of Nova Scotia is facing a potential nursing shortage in the near future. The increasing demand for nursing services brought on by the province's aging population have been met by decreased enrolments in nursing schools and increased retirements as the nursing workforce also ages. Possible means of addressing the pending shortage are to increase enrolment in the local schools of nursing, to recruit RNs from outside the province or to re-recruit nurses who have left the Nova Scotia health care system. The most likely solution will be a combination of all three.

For each year between 1993 and 1997, an average of 650 of Nova Scotia's RNs discontinued their registration. Re-recruitment of those RNs is believed to be an effective means, in terms of both time and cost, of supplementing outside recruitment and the number of new graduates that can be produced annually. Appropriate annual enrolment numbers, therefore, will depend on the potential to re-recruit registered nurses who have previously left the province's health care system.

The primary goal of the re-recruitment survey was to determine the potential for re-recruiting those nurses who were registered to practice in Nova Scotia but have since left the Nova Scotia health care system. Specifically, the objectives were to determine:

- i. why those RNs have left Nova Scotia's health care system;
- ii. where unregistered nurses are currently living and/or working;
- iii. how many RNs could potentially be re-recruited to the nursing workforce; and
- iv. what factors would influence their decision to return.

The study was a collaborative initiative with technical assistance provided by the Department of Health (DOH), administrative support from the Registered Nurses Association of Nova Scotia (RNANS) and financial support from the Nova Scotia Association of Health Organizations (NSAHO).

The survey targeted all RNs who had allowed their registration with the RNANS to lapse at some point since 1994, and had not re-registered up to the end of 1998. That period was chosen since those RNs would have been away from nursing for less than five years and, therefore, could potentially return to nursing practice without requiring a re-entry program. All RNs who fit the targeted criteria, and were 50 years of age or younger in 1998, were selected from the RNANS registration database to participate in the survey.

After a review of current recruitment and retention literature, a draft questionnaire was designed with input from a research steering committee made up of representatives from the DOH, RNANS and NSAHO. The survey was piloted to a small sample of



## ***Re-recruitment Survey: Preliminary Results***

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nurses in early January 1999 and then administered by mail to the entire target group later that month. The survey's mailing list was compiled using the most recent mailing addresses recorded in the RNANS registration database. Each survey package included a cover letter signed by the Executive Director of the RNANS, a questionnaire and postage-paid return envelope.

As the completed questionnaires were returned, they were coded and entered on computer for analysis using SPSS. The requested response date was February 19, 1999 but due to a low response rate, responses were accepted until the completion of the data entry process on March 12.

Of the 1524 Registered Nurses identified for the sample, 261 surveys were completed and returned, for a response rate of 17.1%. The low response rate is attributed to the lack of up-to-date addresses for many of those included in the target population.

This report provides a summary of the survey results.

### **Reasons for Discontinuing Nova Scotia Registration**

Before determining ways to re-recruit those nurses who have left the Nova Scotia health care system, it was important to understand why they had left originally. Nearly half of the survey respondents (46.3%) had been registered in Nova Scotia five years or less before allowing their registration to lapse. The likelihood of leaving appeared to decrease with an increase in length of registration, indicating that those in younger age groups were more likely to leave.

The main reason cited for allowing their registration to lapse was that they had moved outside the province to live or work (49.2%). Some individuals had accompanied their spouse or partner who had found work elsewhere, but for most it was to work or find work themselves. Undoubtedly related to the first reason, 17.7% of respondents said they had left because they were unable to find nursing work in Nova Scotia. A surprising 14.2% said that they allowed their registration to lapse because they were unable to continue working in nursing due to an injury or illness, some of which resulted from their work.

Others left for personal reasons (9.8%), such as raising a family or caring for a sick or elderly relative, while others left nursing for an alternative career (7.5%). Smaller percentages of respondents (less than 3% each) allowed their registration to lapse because they did not have enough nursing hours to qualify for license renewal; RN registration was not required for their current employment position; they had enrolled or re-enrolled in a post-secondary education program; registration fees were too expensive

while unemployed; or they simply left nursing after becoming disillusioned with the nursing profession.

Respondents were asked specifically if there were factors related to the Nova Scotia health care system that had influenced their decision to discontinue their registration. Over half (54.6%) of respondents indicated that there had been; and more than half of those indicated more than one factor. The main factor affecting the decision of 44.9% of those respondents was the lack of nursing jobs in Nova Scotia. In particular, many referred to the lack of permanent full-time positions with benefits available to nurses in the province. A further 25.4% indicated the workload and stress associated with being short-staffed as a contributing factor to their decision to leave. For others, it was what they perceived as being negative changes to health care that resulted from budget cuts, downsizing and restructuring (18.8%).

Similar to the lack of full-time jobs, a further 8.3% indicated that it was the availability of only casual or on-call positions that affected their decision to leave. Related to budget cuts and downsizing, 6.5% described diminished hopes of finding employment in the face of continued lay-offs, including the lay-off of qualified and experienced nurses. Again a number of respondents (6.5%) mentioned their disillusionment with the nursing profession and their own feelings of not providing adequate patient care. Other factors mentioned by 3% or less of the respondents included the lack of benefits for casual employees, lack of job security, poor morale and the lack of opportunities for professional growth and development.

Reflecting the stated difficulty with finding regular full-time nursing employment, when they were last registered in Nova Scotia, 40.4% of respondents were employed in full- or part-time casual positions, 15.8% in regular part-time positions and 10.8% were either unemployed or employed in non-nursing positions and seeking employment in nursing.

### **Activities Since Last Nova Scotia Registration**

Since their last registration in Nova Scotia, more than half (53.9%) of the respondents indicated that they have been registered to practice elsewhere. Approximately 48% of those respondents were registered elsewhere in Canada, predominantly Ontario (9.2%), New Brunswick (5.0%) and British Columbia (3.1%). A small majority (51.8%) of those who were registered outside Nova Scotia, were registered to practice in the United States, predominantly Florida (5.7%), Texas (5.4%) and Maine (4.6%).

## ***Re-recruitment Survey: Preliminary Results***

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At the time of the survey, 53.1% of respondents were living in Nova Scotia. Again a larger percentage were living in the United States than elsewhere in Canada, 25.8% and 21.1%, respectively. In Canada, respondents were most likely to live in Ontario (7.3%), New Brunswick (4.2%) and British Columbia (4.2%). The most popular states were Florida (4.6%), Maine (3.8%) and Texas (3.4%).

When they were last registered to practice nursing in this province, 76.6% were employed in nursing but at the time of the survey, that number had decreased to 51.3%. This was more a reflection of employment preference than the availability of work. In fact, when asked their employment status, nearly one-third (31.4%) indicated that they were not seeking nursing employment. Also, only 10.7% of survey respondents were employed in casual positions compared to the 40.4% who indicated they were employed in casual positions when last registered to practice nursing in Nova Scotia. The percentage remaining in casual positions was again reflective of employment preferences; in a separate question, approximately 10% of respondents indicated that their preferred employment status was casual.

### **Re-recruiting and Retaining Registered Nurses**

When asked about their future nursing plans, 21.2% of respondents said they intended to re-register in Nova Scotia (the majority within the next year or two). In fact, some had already re-registered for the current 1998-99 registration year; 37.7% said they may re-register in Nova Scotia; 8.8% planned to register elsewhere; 15.4% did not plan to return to nursing; and 16.9% were uncertain about their nursing plans.

Of those who currently reside outside Nova Scotia, approximately 62% indicated 'yes' or 'maybe' they would re-register to practice nursing in Nova Scotia. All but one of those who said they had no plans to return to nursing, either in Nova Scotia or elsewhere, currently reside in the province.

Whether or not they had definite plans to do so, most responded when asked what conditions would need to exist in order for them to return to nursing in Nova Scotia. As in the previous questions, the resounding theme was the need for permanent full-time positions (29.6%). For a significant portion, returning to Nova Scotia and to nursing would mean changes to their current personal situation (27.9%), such as their spouse or partner getting employment here or the need to care for a family member no longer existed. For 14.6% of respondents, the availability of a specific type of nursing position would be the motivating factor. Some of the other conditions mentioned were improved working conditions in Nova Scotia's health care system (7.0%); the provision of benefits (6.0%); or an increased salary (5.3%), at least to a level comparable to RN salaries received elsewhere.

Most of those responses were echoed when they were asked what would encourage them to remain in nursing in Nova Scotia. The main responses again were permanent full-time jobs (31.7%); improved working conditions (21.0%); an increased/comparable salary (16.1%); benefits (7.5%); employment in a specific location or type of position (6.1%); and job satisfaction (5.6%).

For those who might not meet the minimum hours of practice required to re-register, they were asked under what conditions they would be willing to enrol in a re-entry program. While the vast majority would not require a re-entry program, those who would, felt that the most attractive features by far would include a reduced or subsidized cost; guaranteed employment when completed; and a reasonable program length.

### **Employment Preferences**

If returning to nursing in Nova Scotia, respondents would be most interested in positions in Community Health, Medical/Surgical or Maternal/Newborn areas of responsibility. They would prefer to work in the Central Health Region, followed by Western, Northern and Eastern, in that order. In terms of their preferred employment status, 55.5% would prefer to work in a regular full-time position; 34% in a regular part-time position; and the remaining 10.4% in casual full- or part-time. Some said they would take anything or another type of position if their preference was not available.

At the end of the questionnaire, respondents were asked to choose from a list of employment features those which were most and least important to them in accepting a nursing position. The employment features that were most important to respondents were a permanent full-time position, a flexible work schedule and general working conditions. The employment features that were least important were daycare services, employment for their spouse/partner or a specific urban/rural location.

### **Educational Background**

The survey included a number of questions pertaining to the respondents educational and personal background in order to 1) determine the characteristics of those who would be most susceptible to a re-recruitment program and 2) to determine how representative the respondents were of the original survey sample. The majority of respondents were diploma educated, although some had obtained higher academic qualifications after completing their initial nursing education. As shown in Table 1 on the following page, those responding to the re-recruitment survey slightly under-represented the portion of the original sample whose initial nursing education was a diploma and, therefore, over-represented those who had completed a bachelor's degree.



### ***Re-recruitment Survey: Preliminary Results***

In terms of their year of initial graduation, nearly 40% had graduated since 1990, which is just a slight under-representation of the overall sample (Table 2). There was also a small under-representation of those who had graduated in the late 1980s. The under-representation in those categories can, in turn, be attributed to the considerable over-representation of respondents who had graduated prior to 1980. Those respondents may have been easier to contact since they were less likely to be returning to nursing, more likely to be currently residing in Nova Scotia and less likely to have registered somewhere else since their last registration with the RNANS.

**Table 1**

<b>INITIAL NURSING EDUCATION</b>				
<b>Initial Education</b>	<b>Survey Respondents</b>		<b>Total Sample</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Diploma	194	74.9	1229	80.7
Baccalaureate	65	25.1	294	19.3
Total	259	100.0	1523	100.0

**Table 2**

<b>YEAR OF INITIAL GRADUATION</b>				
<b>Years</b>	<b>Survey Respondents</b>		<b>Total Sample</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
1995 - 98	34	13.8	166	10.9
1990 - 94	64	25.9	505	33.2
1985 - 89	31	12.6	250	16.4
1980 - 84	37	15.0	234	15.4
Before 1980	81	32.8	367	24.1
Total	247	100.0	1522	100.0

As shown in Table 3, the vast majority of both the sample and the survey respondents were educated in Nova Scotia schools of nursing. Those who graduated in Nova Scotia

## ***Re-recruitment Survey: Preliminary Results***

were somewhat over represented by respondents. Again, those respondents were likely to be more easily reached since they were more likely to have maintained a connection with their home province. Preliminary analysis indicated, however, that respondents who had been educated in Nova Scotia were no more likely to want to return.

**Table 3**

<b>PROVINCE/STATE OF GRADUATION</b>				
<b>Province/State</b>	<b>Survey Respondents</b>		<b>Total Sample</b>	
	<b>Number</b>	<b>Percent</b>	<b>Number</b>	<b>Percent</b>
Nova Scotia	183	79.9	1097	72.0
Other Atlantic Province	20	8.7	384	25.2
Other Province	19	8.3		
United States	4	1.7	43	2.8
Outside North America	3	1.3		
Total	229	100.0	1524	100.0

**Table 4**

<b>AGE GROUPS</b>		
<b>Age Group</b>	<b>Number</b>	<b>Percent</b>
<25	14	5.4
25 - 29	55	21.3
30 - 34	41	15.9
35 - 39	48	18.6
40 - 44	44	17.1
45 - 49	48	18.6
50 - 54	8	3.1
Total	258	100.0



## **Personal Characteristics**

Certain personal characteristics of survey respondents may affect their mobility and availability and, in turn, affect their potential for re-recruitment to the Nova Scotia workforce. Just under 27% of respondents are below the age of 30 and in the early stages of their career and likely to be more mobile (Table 4, previous page). On the other hand, as shown in Table 5, approximately three-quarters of respondents were either married or living common law and, therefore, a second person's career will likely be considered in any decision to return to nursing in this province. Furthermore, over half (56.3%) have dependent children, parents or both (Table 6). Only four of the 45 respondents who indicated their marital status as "single" reported dependents.

**Table 5**

<b>MARITAL STATUS</b>		
<b>Marital Status</b>	<b>Number</b>	<b>Percent</b>
Married/Common law	195	75.3
Single	45	17.4
Separated/Divorced	19	7.3
Total	259	100.0

**Table 6**

<b>DEPENDENTS</b>		
<b>Dependents</b>	<b>Number</b>	<b>Percent</b>
Children	138	52.9
Parents	4	1.5
Both	5	1.9
Total	147	56.3

## **Quotable Quotes**

*In response to the question "Why [some Nova Scotia registered nurses] have discontinued their registration?" – "Anyone stupid enough to ask that question doesn't deserve an answer." (Non-respondent)*

*"Nice to know that you care enough to ask why so many nurses leave the field. Thank you!" (36-year-old female residing in Nova Scotia)*

*"Nursing does not appear to be a valued resource. Nurses, in my experience, are viewed as "hand maidens" for the physicians of this province. I have worked in 2 other provinces in Canada, (Ontario) and Alberta and nurses have more autonomy there. Nurses are not encouraged to think but just "to do" what is ordered. There is little concept of liability and the profession of nursing." (48-year-old female residing in Nova Scotia)*

*"The focus would have to return to the well-being of the patient rather than budget so that the setting could return to it's former status of "hospital" rather than "factory." (47-year-old female residing in Nova Scotia)*

*"Nova Scotia was a wonderful place to work. I would still be there only I needed more security... There is no comparison to the nursing care we give in Nova Scotia. Incredible NSGEU and incredible nursing regional board." (31-year-old female residing in Massachusetts)*

*"I would definitely move back to Nova Scotia for nursing work if a full time job was available in the operating room." (24-year-old female residing in Florida)*

*"Major cutbacks and changes in health care and hospital closures had lead to increasingly difficult and stressful working conditions. The attitude seemed to be you were "lucky to have a job". No one seemed concerned with increasing decreases in health care and working conditions." (47-year-old female residing in Nova Scotia)*

*"There would need to be full time positions available, especially in home care. It is very difficult to practice/live working in several different casual positions. Our home care programs need to "catch up" to those in other areas. I believe those of us working in areas with more advanced programs would have a lot to offer in the development of programs in Nova Scotia." (25-year-old female residing in Nova Scotia)*

*"I actually left Nova Scotia 3 months after I graduated from the V. G. H. School of Nursing and have always hoped to be able to return to my home. I have worked full time in the USA in several states and a variety of nursing positions since January 1993 and certainly feel I have a lot of knowledge to bring back to Nova Scotia with me. I wish that the job situation for nurses would change and allow many of the young nurses that left along with myself to return to Nova Scotia." (27-year-old female residing in Virginia)*

## **Re-recruitment Survey: Preliminary Results**

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*"There is a strong push to increase the number of nurses entering the profession, but no effect on hospital/employers to agree to some type of permanent positions. Until this happens, it would not encourage anyone to go into nursing." (31-year-old female residing in New Brunswick)*

*"RNANS to become more involved in helping work life of Nurse - Re: pensions, work conditions, etc. I feel RNANS has done little over the years to improve working conditions or to ensure nursing was a satisfying career. Most people feel RNANS has done little for the average nurse." (51-year-old female residing in Nova Scotia)*

*"Nothing would change my mind to not return to nursing. A very thankless job - would sooner make \$10,000 a year than have the stress and disruption in my family life. Used to love nursing especially patient care, worked everywhere, outposts/supervisor/head nurse and recovery room, etc., but last few years not worth any amount of money". (46-year-old female residing in Nova Scotia)*

*"Currently, I work in a facility that offers full time days, with benefits. I work in critical care as a staff nurse and shift supervisor. Nurse to patient ratio is 1:2 or 1:3. This area is staffed appropriately to function effectively. We have nurse technicians, nurses, respiratory technicians, and physiotherapists that work together as a team. Work conditions would have to be similar to this or I would not return." (26-year-old female residing in Texas)*

*"Basically, I was told that if job prospects were better elsewhere, then I should go." (39-year-old female residing in Ontario)*

*"I moved to the USA for a full time real job where I am treated as a professional." (29-year-old female residing in North Carolina)*

*"Registration is \$50 for 2 years. Big difference." (25-year-old female residing in Tennessee)*

*"Would love to move back to Nova Scotia, ASAP." (29-year-old male residing in Maine)*

*"Government, administration and nurse managers to appreciate their nurses all year and not for just one week or when there is a nursing shortage...I am ready to return anytime. Is there any jobs? Are the nurses happy in Nova Scotia?" (41-year-old female residing in North Carolina)*

**Appendix I**

**Nursing Utilization Survey**

# **NURSING UTILIZATION SURVEY**

## **OBJECTIVE**

The primary purpose of the Nursing Utilization Survey was to obtain current, front-line, comparative provincial data on Registered Nurse and Licensed Practical Nurse deployment and hours of work in order to:

- To review current baseline budget staffing levels in light of overall nursing expenditures, including overtime, call back, purchased hours, as well as actual vs. budgeted FTE positions; and,
- To review current nursing deployment patterns to determine capacity for re-deployment (casual to full-time, etc.) in response to identified needs.

## **METHOD**

A Nursing Utilization Survey form was designed in consultation with the Patient Care Leadership Group and the approach approved in principle by the Provincial Leadership Committee. The survey was mailed out to the Health Regions, the NDO's and the Home Care and Long-Term Care sectors asking them to provide nursing utilization data for their respective jurisdictions for the 1998-99 fiscal year. The original design of the survey was scaled back considerably in order to ensure greater compliance.

## **LIMITATIONS**

Completing the survey was a very complex and time-consuming task. Some jurisdictions, given the absence of refined health human resource information systems, were unable to complete the survey in full detail. Thus, in view of the overall concerns regarding data integrity, the resultant capacity for provincial generalization is somewhat compromised.

Nonetheless, some of highlights of the utilization survey are set out below. While it is recommended that caution be exercised in interpreting the survey without other corroborative or supporting data, there are some interesting, comparative results that warrant further exploration.

## **RESULTS**

### **Individual Regions and NDOs:**

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#### **Central Region**

Three facilities in the Central Region reported data for the fiscal year 1997/98. Another three reported for the calendar year 1998. Total budgeted FTE's were unavailable. However, a total of 262.35 FTEs were used. Fifty-five (21%) of these were for LPNs and the remaining 207.35 (79%) were RN FTEs..

During the time period reported, a total of 528,640 hours were worked by LPNs and RNs. Seventy-seven percent (408,285.9 hours) were worked by RNs and 23 percent (120,355 hours) were worked by LPNs. Casual RNs worked 9.2% of RN hours worked and accounted for 8.3% of the actual RN budget. Casual LPNs worked 16.3 % of LPN hours worked and accounted for 15.6% of the actual LPN budget. Casual hours accounted for 9.4% of actual costs.

Overtime hours accounted for only one percent of reported hours worked and sick hours accounted for 3.5 percent of hours worked. There were no purchased hours of work in the Central Region during the reported time period. There were also no vacancies.

A total of 54 RNs and/or LPNs terminated employment at the various facilities in the region at some point during the reporting period. It is unknown whether the people who terminated obtained employment at other facilities within the Central Region Health Board, in some other sector such as long term care, or left nursing altogether. Average sick time for LPNs was 11.95 days and 8.09 days for RNs.

#### **Northern Region**

The Northern Region reported data for the fiscal year 1997/98. For this time period, a total of 551.8 FTEs were budgeted for RNs and LPNs (443 for RNs and 108 for LPNs). A total of 585.82 FTEs were actually used (474 for RNs and 111 for LPNs). This is an increase of 6 percent over budgeted FTEs and resulted in a 0.7 percent increase in costs.

A total of 1,148,410 hours were worked in the Northern region by RNs and LPNs. RNs worked 81 percent (929,799) of these hours. LPNs worked the remaining 19 percent (218,611). Ten percent of the RN hours were worked by casual RNs, whereas casual LPNs worked 18 percent of the LPN hours. The total cost of casual hours accounts for almost 10 percent of actual costs of RN and LPN FTEs.



Overtime hours in the Northern Region were very small; less than one percent of hours worked. Approximately 1500 call back hours were worked by RNs at a cost of \$31,159. There were no purchased hours and no vacancies at the time the survey was completed. Average sick time was 8.9 days per year for RNs and 10.30 for LPNs.

### **Eastern Region**

The Eastern Region reported data for the calendar year 1998. In that year a total of 309 FTEs for RNs and LPNs were budgeted and 332 were actually used. This is a 7% increase over budgeted FTEs and resulted in an increase of 4% over budgeted costs. Of the actual FTEs, 262 (79%) were for RNs and 70 (21%) were for LPNs.

A total of 651,266 hours was worked by RNs and LPNs. Seventy-seven percent were worked by RNs and the remaining 23% were worked by LPNs. Of the RNs hours, 11% were worked by casual RNs. Twenty percent of LPN hours were worked by casual LPNs. All casual hours accounted for 11% of actual costs.

Overtime hours were less than one percent of hours worked. Sick hours accounted for four percent of hours worked. Call back hours amounted to 1746 hours. There were no purchased hours and no vacancies at the time the survey was completed. A total of 18 RNs and LPNs terminated their employment within the region at some point during the reporting period. Average sick time in this region is 9.55 days per year for RNs and 12.89 for LPNs.

### **Western Region**

While full data for the Western Region was not available at time of printing, summary data for Yarmouth revealed comparable trends. The 174 RN's in Yarmouth worked a total of 276,217 hours, recording a FTE total of 140.6. Call back and overtime hours were about 2.9 percent of the total nursing hours. If casuals and part-time hours are combined, 50 nursing staff worked 30.8 FTE's.

With respect to LPN's, 53 staff resulted in 42.1 FTE's, 13 casuals were 5.8 FTE's with overtime and call backs totalling about 1.1 FTE's for full-time, part-time and casual LPN's.

About 31.6 percent of RN's in Yarmouth worked part-time or casual, while the comparable figure for LPN's was 56.6 percent.

### **QEII Health Sciences Centre**

The QEII reported data for the fiscal 1998/99 year. For this period, the QEII budgeted 1860.0 RN and LPN FTEs. Actual FTEs were the same as budgeted; 88 percent (1645 FTEs) for RNs and 12 percent (214.9 FTEs) for LPNs. While actual FTEs remained as expected, the cost of these FTEs was 5 percent higher than budgeted. A head count of

RNs and LPNs was not available.

A total of 3,638,100 hours were worked by RNs and LPNs. Eighty-eight percent of these hours were worked by RNs and the remaining 12 percent were worked by LPNs. Data related to hours worked by casuals was not available. Overtime for both RNs and LPNs accounted for approximately one percent of hours worked. Sick hours accounted for around 5 percent of hours worked and cost approximately 4% of actual costs.

No call back hours were reported. However a total of 16,600 purchased RN and LPN hours were reported at a cost of \$375,000. There were no vacancies at the time of the survey. Sick time averaged 11.2 days per year for both RNs and LPNs.

### **IWK Grace Health Centre**

The IWK Grace Health Centre is different from other regions and non-designated organizations in that it has no LPNs. In the calendar year 1998, 629 RN FTEs were used. On the day the survey was completed there were 449 (48%) full-time, 350 (37%) part-time and 145 (15%) casual RNs at the IWK Grace. These 944 RNs worked a total of 1,064,211 hours, 8 percent of which were worked by casual nurses.

Approximately two percent of hours worked were overtime hours. Five percent were sick hours. A small amount of call back hours were worked (402 hours). No hours were purchased and there were 23.6 vacancies on the day the survey was completed. The average amount of sick days taken was 10.5 days per year.

### **Cape Breton Healthcare Complex**

The Cape Breton Healthcare Complex reported data for the first nine months of fiscal 1998/99. This data was extrapolated to twelve months for purposes of this analysis. During the twelve month period, 833.5 RN and LPN FTEs were used. Seventy-four percent of these FTEs were for RNs and the remaining 26 percent were LPNs.

This NDO reported a total of 964 full-time, part-time and casual nurses on the day it completed the survey. Of the RNs, 56% are full-time, 20% are part-time and the remaining 24% are casuals. Sixty-three percent of LPNs are full-time, 12 % are part-time and 25% are casuals. These 964 RNs and LPNs worked a total of 1,631,933 hours. Data related to casual hours worked was not available.

Overtime hours worked were less than one percent. Sick hours however, accounted for approximately 4 percent of hours worked. Call back hours were small; 1098 hours. There were no purchased hours and no vacancies on the day of the survey. Average sick time for RNs was 8.8 days per year and 13 days per year for LPNs.

## **All Regions and NDOs:**

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As shown in the table below, 42% of the total nursing hours which were reported are delivered at the QEII Health Sciences Centre. The Central Region, QEII, IWK Grace together deliver 60% of nursing services in acute care.

	<b>Total Hours</b>	<b>as a % of total</b>
Central	528,640.9	6
Northern	1,148,410.77	13
Eastern	651,266	8
Western *	n/a	n/a
QEII	3,638,100	42
IWK	1,064,211.1	12
NSH *	n/a	n/a
CBHCC	1,631,933.6	19
<b>TOTAL</b>	<b>8,662,562.37</b>	<b>100</b>

\* Incomplete at time of printing.

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## **Eastern Region:**

**RNs:** The Eastern Region reported data from the calendar year 1998. In that year a total of 309 FTEs for RNs and LPNs were budgeted and 332 were actually used. This is a 7% increase over budgeted FTEs. Of the actual FTEs, 262 were for RNs and 70 were for LPNs. This is a ratio of 3.7 RN FTEs for every LPN FTE.

Total hours worked by RNs in the region was 500,543, of which eleven percent were worked by casuals. These casuals accounted for almost ten percent of the total actual budget. Five thousand hours of overtime were worked. This is the equivalent of 2.5 FTEs. Sick hours taken totaled 20,023 which cost over half a million dollars. Average sick leave for all RNs was 7.6 days per year. Call back hours totaled 1746; not quite the equivalent of one FTE.

A total of 14 RNs terminated their employment with the region throughout the year. The number who have since resumed employment with the region is unknown.

**LPNs:** With respect to LPNs, in 1998 68 FTEs were originally budgeted for unit-producing LPNs. However 70 FTEs were actually used. The associated increase in expenditures was 2.4 percent or \$58994.

A total of 113 LPNs worked in the Eastern Region. Casuals made up the largest proportion of this group at 44%. Forty-two percent were full-time and the remaining fourteen percent were part-time.

LPNs worked a total of 150723 hours. Twenty percent (30365) of these hours were worked by casuals. These hours accounted for Twenty-one percent of the actual budget. 851 hours of overtime were worked but these hours accounted for only 0.6% of the total actual budget.

Sick hours (7217) accounted for 4.7 percent of worked hours and 5.3 percent of the total actual budget. *This equates to 3.6 FTEs.* Sick leave averaged 13 days per year.

Over the year four individuals terminated their employment with the region.

There were no purchased RN and/or LPN services for the region in 1998 and no vacancies for either category at the time of the survey.

**a) Unit-Producing RNs:**

In that year 213 FTEs for unit-producing RNs were budgeted. However 233 FTEs were actually used. This is a 9% increase from budgeted FTE levels. This increased number of FTEs cost 4.5% (\$515,635) more than what was budgeted.

The Eastern Region reported a total head count of 295 unit-producing RNs. Forty-eight percent of these (144) were full-time, twenty percent (56) were part-time, and the remaining thirty-two percent (95) were casuals. *(These 295 individuals filled the 233 F unit-producing RN FTEs.)*

Unit -producing nurses worked a total of 464,678 hours. Almost twelve percent (11.5%) of these hours were worked by casuals. *(32% of the people worked 11.4% of the hours.)* The hours worked by casuals accounted for 11% of the total actual budget.

Five thousand hours of over-time were worked. This accounts for one percent of hours worked and total actual budget. Based on a 1956.675 hours FTE, which is the definition used in the Eastern Region, this is the equivalent of 2.5 FTEs.

Sick hours (18,800) accounted for four percent of hours worked and total actual budget. Although it is unreasonable to expect that sick leave would ever be zero, when translated to FTEs, which is 9.6 FTEs, we get an indication of the "size" of these sick hours. On average, unit-producing RNs in the Eastern Region took 10 sick days per year.

A total of 2.95 FTEs were terminated throughout 1998 in this region and fourteen individuals terminated their employment with the region during this time.

**b) Management & Operational Support RNs:**

The Eastern Region budgeted for 28 FTEs for the year and 29 were actually used. As a result, actual budget expenditures were 4.6% (\$77,394), higher than expected. The 29 FTEs were staffed by 14 full-time and 5 part-time RNs who worked a total of 35,865 hours. *35865 is approx. 17 FTEs. Why is there only 19 people working 29 FTEs.*

An average of 5 sick days per year were taken by Management nurses. A total of 1222 hours of sick time were taken. These hours accounted for 2 percent of the actual budget.

**c) Unit-producing LPNs:**

Originally 68 FTEs were budgeted for unit-producing LPNs. However 70 FTEs were actually used. This is an increase of three percent. The associated increase in expenditures was 2.4 percent or \$58994.

A total of 113 LPNs work in the Eastern Region. Casuals make up the largest proportion of this group at 44%. Forty-two percent are full-time and the remaining fourteen percent are part-time.

LPNs worked a total of 150723 hours. Twenty percent (30365) of these hours were worked by casuals. These hours accounted for Twenty-one percent of the actual budget. 851 hours of overtime were worked but these hours accounted for only 0.6% of the total actual budget.

Sick hours (7217) accounted for 4.7 percent of worked hours and 5.3 percent of the total actual budget. *This equates to 3.6 FTEs.* Sick leave averaged 13 days per year.

Over the year four individuals terminated their employment within the region.



## **CONCLUSIONS**

### **Sick Time**

Sick time for the three Regions and 3 NDO's who reported amounted to \$5.7 million, or 4.1 percent of the reported nursing budgets. The range of sick days was 8 to 13 days with a mean of 10.

While it is recognized that the factors affecting sick time are complicated and inter-related and, as such, no savings can be guaranteed, it is reasonable to expect that if staff complements were increased and staff were more optimally deployed, that overall work stress would be somewhat reduced resulting in potentially lower sick times.

It is noteworthy that if sick time for all employed nurses was reduced by even one day (an average of 10 percent), \$1.5 million, equivalent to 30 nursing positions, could be saved.

### **Overtime, Call Back and Purchased Hours**

About 1.3 percent of total hours are overtime, or 2.0 percent of cost with allowance for overtime pay. This translates to the equivalent of 70 nurse FTE's province-wide. The grand total of overtime, call back and purchased hours is the equivalent of almost 90 full-time nursing positions.

While it is recognized that some overtime and call back may be necessary to handle short-term wide swings in nursing demand on an institution by institution basis, if overtime and call back was reduced by half over 30 FTE nursing positions could be purchased province-wide.

### **Role Shift**

What traditionally the ratio of RN's to LPN's had been 60:40 throughout much of Atlantic Canada, changing patient acuity in health care institutions has shifted this ratio to 76:24 for the Regions, to 90:10 for many NDO's.

Further changes should be planned carefully when we consider that for every single point change in the ratio of RN's to LPN's for the province, the impact is about \$1 million in overall staffing cost.

### **Nursing Budget Overages**

Actual FTE's were reported as 6 and 8 percent over budgeted nursing FTE positions in two Health Regions. In broad terms, if the figure of 6 percent were applied generally to the hospital sector as a indicator of demand, an additional 250 registered nurses would be required.



## **Casualization**

If casual hours are converted to FTE's, the percentage is quite low throughout the province: Eastern is 28 percent, Central is 12.5 percent, Northern is 23 percent, the IWK is 31 percent and the Cape Breton Health Care Complex is 66 percent, making the fullest use of its casual work force.

When we consider that 25 percent of casuals are working two or more jobs, and that the remaining 75 percent are only working an estimated maximum of 0.5 FTE, there appears to be a degree of untapped capacity within the nursing casual and part-time work force. If even one-third of the casual positions were converted to full time, there would be an potential increase in the nursing work force of over 300 FTE's.

While it is recognized that some casual positions are still required, that some converted casual positions would have to be back-filled, that not all nurses want to work full-time and that the head count of casuals may be subject to some double counting, there still appears to be a potential for an expanded use of casual nurses.

## **Appendix J**

### **Demand Forecasting**

# **Future Demand for Nurses and Licensed Practical Nurses**

## **Executive Summary**

Nova Scotia's health system has undergone enormous change over the past few years through reform and economic rationalization. These initiatives have created new challenges for health human resource planning. Every health profession has been affected with respect to levels of demand for their services, roles played and skills required. Positions have been downsized, restructured, and eliminated. The nature and scope of practice within and among health professions have been altered, in some cases, dramatically. Effective health human resource planning has become critically important in this environment of change. To build a workforce that is designed to meet the health needs of our community it must be based on comprehensive information that promotes policy and planning for sufficient numbers of relevant health providers who can work in ways that maximize health outcomes. This is particularly true for nurses. Clearly, Health Human Resource planning requires a significant shift away from historical data base practices toward those requiring new kinds of information. However, much of this information is either not currently being monitored or available. In addition, related government policy and planning directions for the next few years have not been clearly articulated. Yet, the need for health human resource decisions is immediate. Therefore, in the absence of some critical pieces of information, and in spite of the significant limitations of existing models, interim measures are necessary to determine the short-term demand for nurses.

## **Purpose**

According to the terms of this contract, this report proposes a forecasting model and uses it to project the demand for Registered Nurses (RNs) and Licenced Practical Nurses (LPNs) over the next three-to-five years. In the preparation of this report telephone consultations were held with thirteen key stakeholders throughout the province (urban, rural), including a range of sectors (hospitals, long-term care, home care), and a range of positions (staff nurse to management). In addition, three experts in the field of HHRP (policy, models, demand factors), external to the province, provided feedback and input to this report. Specifically, we report:

- Demand forecasting models under consideration and/or currently being applied in Canada and other jurisdictions.
- The underlying assumptions on which the forecasting of nursing requirements were based.
- The demand factors affecting future workforce requirements, including those for which there is adequate information and those for which data are not currently available.
- A model to forecast nursing requirements based upon available data and information.

- The information requirements and strategy for developing the data resources required for incorporating additional demand factors in the proposed model.

### **Health Human Resource Planning Approaches**

Health human resources play a critical role in the protection, promotion, and restoration of the health of Canadians. To ensure that the health care system maintains an appropriate workforce, health human resources planning (HHRP) processes need to consider three components: function, methodological path, and model.

The first component, function, involves consideration of the purposes of HHRP and involves planning, production, and management (Hall, 1998). According to Birch (1997), the second component of HHRP involves consideration of three methodological paths: projections (based on extensions or extrapolations of observed patterns, trends or relationships in the future), forecasting (consideration of anticipated changes that are known or expected to occur, and are unavoidable), and planning (consideration of various endogenous changes in the system, i.e. policy instruments that might be used to influence the determination of requirements in an effort to meet policy directions). The third component of HHRP, model, involves consideration of the approach. Up until now, three models for health care resource planning have been available: the needs-based, utilization-based, and effective-demand model. It is apparent that empirical issues, associated benefits and limitations exist with all three approaches to HHRP. Further, to be effective, all approaches to HHRP must consider three critical areas: 1) human resource supply levels; 2) population health care need levels; and 3) societal willingness to fund health care (Markam & Birch, 1997).

The **needs-based approach** addresses population needs from a patient utilization baseline. It estimates future requirements based on the appraised health deficits of the population. The needs-based planning approach also addresses the potential of health care interventions for solving these problems. However, the estimations may, in fact, be inaccurate, or based on biased opinion (health care practitioners' judgment) rather than epidemiological or economic information. Some authorities also argue that the approach may reinforce existing inequalities within the health care system. The high costs associated with needs-based approaches, recognized difficulties in measuring (directly or indirectly) health needs, and lack of evidence regarding its cost-effectiveness render needs-based approaches largely unfeasible at the present time.

The **Utilization-based approach** to HHRP, employs current levels of service provided as a baseline measure. In addition, current and future population demographics are taken into consideration when projecting future

needs. However, Markham & Birch argue (1997) that this approach is limited by the underlying assumptions that: (a) the current level of services meet the population need adequately; (b) age and sex specific service requirements remain constant over time; and (c) the size and demographic mix of the population changes according to predictions.

The **effective-demand approach** is based on the expected availability of resources to fund health care human resources. Using this approach, the most important consideration is what society can afford and is willing to pay for health human resources. The strength of this approach is that it considers principles of effectiveness or efficiency and provides a realistic context in which these principles can be used. However, the concepts of efficiency and equity are context specific and therefore only hold for certain conditions.

HHR planning is no easy process. Each component and each alternative contained within requires a complex array of information and methodical decision-making. In addition, it involves a clear delineation of the assumptions on which decisions are made.

### Assumptions

Forecasting the demand for nurses (RNs, LPNs) varies on an ability to accurately predict the future. The more that information is complete, accurate, comprehensive, and available, the more accurate that projections are likely to be. Unfortunately, Nova Scotia, like many other jurisdictions across Canada, lacks sufficient data and management infrastructure on which to base its projections. Hence, projections must be based on a set of anticipated conditions.

Projections are also dependent on the values and plans that underlie the policy framework of a health care system. In an ideal world, forecasting the demand for nurses would be based on assumptions, for example, that the current distribution of nurses is known to be less than optimal to meet health needs and should be adjusted; that nurse requirements are determined independently of current utilization; and that society is willing to allocate funds for nurses according to health needs. However, these assumptions are often not the reality, and in the absence of a clear vision for the Nova Scotia health care system, a set of assumptions reflecting the observed realities of how it operates was articulated and used as a context for this report:

1. The current distribution of nurses is not optimal for health needs
2. The distribution of nurses will reflect human and fiscal realities in Nova Scotia
3. Society allocates funds according to available resources and political will - relative to competing demands
4. Conditions will remain unchanged for nurses over the short-term. This is in spite of the fact that many conditions will change for nurses (e.g.,

number of nursing hours to support patient days of care, nurse roles, per capita utilization rates).

5. Demographic characteristics will have a dramatic effect on the health care system. While most of the evidence indicates that the growing numbers of elderly will have a dramatic effect on the need for nurses, there is some evidence that this demographic characteristic may not have the projected health care utilization rates.
6. The health care system will continue to be controlled by the medical model and by physicians. In spite of the evidence, growing recognition of primary health care principles, and of the increasingly participatory role of other disciplines in policy decisions, there is no clear evidence that the medical model or physician-based governance system will change over the short-term.
7. Working preferences of nurse (roles, hours, employment status) will remain unchanged. In spite of the general feeling that the existing workforce is extremely dissatisfied with current employment conditions, the absence of meaningful, managed, and available data-bases make projections based on preference very difficult.

### Demand Factors

There is a growing awareness that a number of variables influence the demand for nurses. The O'Brien-Pallas team (O'Brien-Pallas, Baumann, Donner, Lochhass-Gerlach, Luba, Lakatas, Armasi & Mallette, 1998b) has considered a broad range of such factors, including: (a) population characteristics that might influence the need for health care, (b) ways the population uses the health care system, (c) ways nurses provide health care in the system and costs involved, (d) others who provide similar or the same services, costs involved, and economic and political factors that influence utilization, and (e) clinical and health status outcomes resulting from the different types of nurse utilization.

From this template, we identified a number of specific factors and considered each in terms of how it might affect the demand for nurses over the next three-to-five years. Where data were available, we considered factors directly. In cases where only indirect data were available, proxy measures were used. In cases where no information was available, we identified necessary data sources for such consideration. Those factors affecting demand profiled in this report include:

#### Population Characteristics

- Demographic factors
- Population Health Status and Determinants of Health



### Health System Characteristics

- Availability of funding resources
- Changes in Health System Structure
- Advances in Treatment Modalities
- Changes in Consumer Health Practices

### Nurses and Nursing Care

- Roles
- Working Conditions
- Nurse Utilization
- Nurse Requirements
- Relative Impact of Nursing Hours and Utilization on FTE Requirements

### **Projections**

Our team proceeded with projecting the demand for nurses by selecting the most appropriate HHRP approach, articulating the assumptions on which we would base our forecasting, and delineating the most influential demand factors for which information was available. While there were many limitations on the information available, all sectors of the health care system (hospitals, long-term care, home care, primary care) were taken into consideration in our projections.

### **Hospitals**

Utilization-based models are best applied when estimates are available for the number of nursing hours used by each age and gender group in a population. These utilization rates are then directly applied to population projections to estimate the number of nursing hours that will be required in the future, based on existing utilization patterns. This approach could not be used in the current study because estimates of nursing hours by age and gender group are not available. This project consequently employed a more indirect approach which estimated the number of hospital days of care per capita used by specific age/gender groups and then applied these utilization rates to the projected population to estimate the number of days of care that will be required in the future. Estimates of the number of nursing hours delivered per day-of-care were then applied to the projected days of care to estimate the number of additional nursing hours that will be required.

This approach may be more conservative than the direct approach because the use of current estimates of 'nursing-hours-per-patient-day' (NHPPD) may increase with a higher concentration of elderly persons in hospitals, although there is some dispute about how the elderly will affect the health care system. To compensate for this problem, the model does allow for testing the extent to which the use of different levels of NHPPD affects the projected number of nursing hours required.

To provide a baseline for the projection of future days-of-care requirements, the age-gender utilization patterns from 1997/98 were applied to projected population figures through to 2005. The resulting figures are estimates of the total number of days-of-care that will be required in each future year if the 1997/98 age/gender utilization rates remain unchanged and only the size and age distribution of the population changes.

**Table 1**  
**Projections of Future Hospital Days-of-Care Required 1997-2005**

Year	Days-of-Care	Additional Days-of Care over 1997/98
1997/98	1102796	0
2002/03	1163021	60225
2003/2004	1175409	72613
2004/2005	1187352	84556
2005/2006	1199315	96517

### **Nursing Hours**

The projection model requires an estimation of the average number of nursing hours per patient day of care. These estimates were available from Statistics Canada for Nova Scotia Hospitals for 1992/93 and 1993/94 but more recent estimates have not yet been released. The results of the March 1999 survey of hospitals by the Department of Health were used to provide more recent estimates. The DOH survey collected 'total paid nursing hours' from the Regional Health Boards and Non-Designated Organizations for both RNs and LPNs for 1998/1999. At the time of this analysis, results were available for all areas other than the Western Region. 'Total days of care' were calculated from the PHRU databases for the organizations and health boards which had responded to the survey and these counts were used in conjunction with the DOH survey responses to provide current estimates for the number of nursing hours per patient days of care provided. The figure which was derived from this process for 1998/1999 was 9.13, exactly the same as the 1993/94 estimate from Statistics Canada. These figures should be interpreted with some caution. The results, therefore, suggest that the reported reduction in hospital employed nurses has been primarily due to reduced utilization rates and the subsequent reduction in patient days. Given that different data sources were used for the two sets of calculations, it would be difficult to conclude that these values remained unchanged between 1993/94 and 1998/99 as suggested. However, the results do not speak to the increased level of patient acuity which has resulted in an increased burden of care for nurses noted in a Stakeholders Conference (Nova Scotia Department of Health, March 1999) and elsewhere in the literature (e.g.,



Baumgart, 1997; Buchan, Hancock & Rafferty, 1997; Davidson, Folcarelli, Crawford, Duprat & Clifford, 1997). In other words while these results do reflect enhanced productivity, they do not consider the cost-effectiveness of this productivity. While nurses may be delivering the same number of hours of care, they are working with a much sicker patient caseload and with no opportunity for relief. While no information was available for this report, the ramifications of this situation on sick time (as reported in the focus groups and elsewhere) and, ultimately on the demand for nurses, needs to be tracked.

**Table 2**  
**Nursing Hours-Per-Patient Day: Alternative Estimates**

	Statistics Canada 1992/93	Statistics Canada 1993/94	DOH Survey 1998/99
Public Hospitals	9.04	9.13	9.13
Registered Nurses	N/A	N/A	7.72
LPNs	N/A	N/A	1.41

### **Nursing Requirements**

The estimated nursing hours per patient day of care figures were then applied to the projected number of days of care to yield the following estimates of additional nursing FTEs required. A figure of 1637 nursing hours/FTE was utilized. This represents the FTE rate used by the QEII Health Sciences Center.

**Table 3**  
**Additional FTEs required over 1997 by Year**

Nursing Hours per patient	Additional FTEs required over 1997			
	2002	2003	2004	2005
9.13 (Total)	336	405	472	538
7.72 (RNs)	284	342	399	455
1.41 (LPNs)	52	63	73	83

### **Long-Term Care**

The 1997/98 Pharmacare Registration file was utilized to identify the number of registrants in nursing homes by age and gender. This estimate assumes that most nursing home registrants are registered with the Provincial Pharmacare program. The total number of individuals identified as nursing home registrants was 8,161. Age and gender utilization rates were calculated for this

population and applied to population projections for the Province of Nova Scotia. This analysis allowed for the projection of the future size of the Nova Scotia nursing home population based on 1997/98 utilization rates. It should be noted that, no attempt was made to assess the eligibility of residents for long-term care – i.e., determine whether long-term care residents could have been more appropriately cared for through Home Care. Also not examined because of lack of data, were the effects of an expanded Home Care program in Nova Scotia, on the need for long-term beds.

**Table 4**  
**Registrants in Nursing Homes**

YEAR	Number of	# Over 1997/98	% Over 1997/98
1997/98	8161		
2002	9289	1127	13.8
2003	9450	1289	15.8
2004	9588	1427	17.5
2005	9784	1623	19.9
2006	9957	1796	22.0

Nursing hours per patient day estimates and FTE counts are not currently available for this sector. According to Department of Health figures, the long-term care sector employed 999 RNs and 915 LPNs in 1997/98 on a full-time, part-time and casual basis. At the time of the study, there were no FTE figures available for the province as a whole.

Some figures were available from the Northwood Care Centre in Halifax that reported a total of 75 employed RNs accounting for 41.29 FTEs. If a similar 'employee-to-FTE' ratio were in place in other long term care facilities across the province, the 999 nursing personnel would translate into 632 FTEs. Northwood also reported 65 LPNs working 46.92 FTEs and the application of this ratio to provincial LPN counts yielded an estimate of 663 FTEs for this group.

Based upon these FTE estimates, the forecasted 17.5% increase in residents by 2004 would require an additional 111 RN FTEs and 116 LPN FTEs to provide a similar staff-to-resident ratio.

### **Home Care**

Given the relatively recent Home Care developments in Nova Scotia, it is difficult to carry out a utilization-based projection of demand. This situation is complicated by the lack of available data pertaining to the age and gender of users across the province and a lack of hours-of-service patient data. The

eventual development of the proposed Home Care Database should resolve this problem in the future.

In attempting to estimate the future demand for home care nursing, a number of factors were pertinent:

1. A 1998 report, based on the National Population Survey of 1994/95, estimated that over fifty percent of the persons requiring home care in Canada were not receiving the service. From a needs-based planning perspective, it would appear that a doubling of home care expenditures would be required to meet the existing need. At the time of the survey (1994/95), home care expenditures in Nova Scotia were only 53% of the national average and this would suggest that the 'unmet need' estimate would be much higher for Nova Scotia.

**Table 5**  
**Home Care Expenditure**

	1994/95			1997/98		
	Expenditure (000)	Population (000)	Per Capita	Expenditure (000)	Population (000)	Per Capita
Nova Scotia	29,786.7	926.3	32.15	75,776.6	934.6	81.07
Canad	1,770,075.	29,036.0	60.96	2,095,975.	30,300.4	69.17

Sources: Home Care Expenditures from Public Home Care Expenditures in Canada, Health Canada 1998. Population figures from Statistics Canada Website

2. Since 1994/95, home care expenditures in Nova Scotia have increased substantially from \$32.15 per capita to \$81.08 per capita, seventeen percent above the national average. The relatively small increase which has occurred nationally since 1994/95 would suggest that the estimate of unmet need at 50% would have remained relatively unchanged on a country-wide basis. The substantial increase that occurred in Nova Scotia suggests that the corresponding rate in the Province may have dropped below the fifty-percent level but there are no data available to allow for a verification of that assumption.
3. Using Ontario data, Birch, Lavis et al (1994 ) estimated that the demand for home care services would increase by 20% in that province between 1995 and 2005, due to the changing population structure.

In summary, then, utilization-based projections of the demand for home care services in Nova Scotia are complicated by a lack of available data. At the same time, the planning of home care services is dominated by considerations of needs-based planning because of the high level of unmet need both nationally

and provincially. Within this context, the future growth of the sector and the corresponding increase in demand for home care nursing services, will be governed by considerations of need and affordability to a far greater extent than it will be governed by changing population structure.

There are also problems related to the estimation of the current supply of home care nurses in the Province. According to Department of Health figures, there were 294 RNs and 201 LPNs reporting employment in the home care sector in 1998/99. This count includes full-time, part-time and casual staff and there is no basis for estimating the number of FTEs represented by these figures. At the time of this study, personnel figures were available from only two of the larger home care providers in the Province - VON Halifax and VON Kings County. These two service providers employed 75 RNs and 32 LPNs who accounted for 53.2 and 22 FTEs respectively. If this ratio of personnel-to-FTE is typical of the province as a whole then the 294 RNs employed provincially would account for approximately 208 FTEs. The corresponding figure for LPNs would be 201.

Given the lack of useful local data, and its management, and the need for a provincial estimate of future demand in this sector, the following approach is recommended:

1. Assume an increase in demand of ten to twelve percent, based on the changing population size and age-structure to 2005. This reflects the estimates for the Province of Ontario for the same time period by Birch, Lavitz et al (1995).
2. Assume an 'unmet need' level of thirty-to-forty percent. This assumption reflects the national estimate of 50% unmet-need from the National Population Health Survey in 1995 and the relative position of home care expenditures per capita in Nova Scotia in 1994/95 and 1997/98.

The application of these assumptions would result in a forecasted demand for the following number of additional nursing FTEs by 2005.

**Table 6**  
**Forecasted Demand for Nursing FTEs in Home Care by 2005**

Due to Population	23	22
Due to Unmet Need	73	70
Total	96	92

## **Primary Care**

Primary care nurses fall into two groups: public health nurses and nurses employed in physician's offices. There are no data available for the projection of demand in these two sectors in Nova Scotia. At the same time, it is possible that these sectors may be undergoing substantial changes related to role definitions and, consequently, any projection of demand based upon population-changes would miss this critical consideration. The advent of primary care reform in Nova Scotia and elsewhere in the country, including the promotion of models of advanced practice nursing in the community (e.g., the four advanced practice nurse demonstration projects targeted for Nova Scotia), will probably have a substantial effect on both the role and the demand for nurses in this sector. Using Ontario data, Birch, Lavis et al (1995) estimated an increase in demand for public health nurses of three percent and physician practice nurses of eight percent between 2000 and 2005. Given the lack of data to support a similar projection in Nova Scotia, the application of the Ontario figures to Nova Scotia would appear to be the only course available. However, the lack of FTE data or estimates for these sectors in Nova Scotia prevents the useful application of these projections. Consequently, it is not possible to carry out a meaningful projection for these sectors at the present time.

## **Recommendations**

The Canadian health system has generally not used forecasting models to determine health human resource requirements, and nursing is no exception. Instead, predictions are usually based on insufficient, indirect, and outdated data (Bass & Howes, 1999). In addition, when forecasting models are used they ordinarily fail to consider those factors that influence demand. Further, the effects of resource allocations are rarely evaluated on patient health outcomes or nurse effectiveness. Indeed, aside from times of critical nursing shortage, limited emphasis has been directed toward meaningful health human resource planning at the provider, regional, provincial, or national levels. However, the cost of inadequate planning make the approach no longer a realistic possibility and the potential gains for the patient, health care system and nursing are too good to ignore. Now is the time for action.

The following recommendations are designed to build a more effective approach to forecasting the demand for nurses in Nova Scotia. They depend on a commitment between the province and service providers to specific roles, expectations, obligations, and accountabilities around the monitoring and use of comprehensive data in policy formulation, planning and decision-making about nursing resources. Critical to this framework is a carefully negotiated partnerships: (a) among the province, regional health boards, provider agencies to address issues, resulting from regionalization, pertaining to the health care system; and (b) among professional associations, and academic institutions to address issues pertaining to the provider. The following recommendations are



made to assist in the development of a meaningful and practical approach to demand forecasting for nursing resources. They are based on the assumptions, discussed above, that: the distribution of nurses is not optimal; that distribution will be affected by available resources and political will; and status quo conditions; health care system effects from changes in certain sociodemographic characteristics; a medical model and physician-controlled health care system; and unchanged working preferences of RNs and LPNs.

1. In order to forecast the demand for nursing, it is critical that Nova Scotia develops a clear vision and guiding principles for the health care system.
2. Demand forecasting for nurses should be carried out as part of a larger Health Human Resource Planning (HHRP) process, given that the health care system consists of a complex array of numerous competing disciplines. As the World Health Organization (1995) argues, now is the time to embark on human resource planning using an approach that is policy-relevant, integrated, health needs-based, consumer-focused, goal- and capacity-driven, adequately resourced, evidence-based, accountable, and reflective of the unique and shared competencies of all stakeholders.
3. The needs-based model should be the model of choice for HHRP, given that most experts agree it provides the most accurate and meaningful forecasting for nursing. However, the lack of appropriate health care data, measurement, and management systems frameworks prohibits the use of this approach at the moment, and necessitates that alternate models be considered.
4. In the absence of sufficient data to operationalize the Needs-Based approach, we recommend, as the 'next best' model, the Utilization-Based approach to forecast the demand for nursing resources over the next 3-to-5 years in Nova Scotia. We further recommend that along with the traditional variables of client population age and gender, the Utilization-Based approach should determine the effect of other demand factors on base projections. More specifically, it should consider the effect of variables such as substantial change in the nursing role (advanced practice nursing in primary care, increased use of home care), changes in worklife conditions (casualization), changes in surgical procedures (laser surgery), and the introduction of new pharmaceutical products (eg. Clozapine, Beta Blockers) on the hours of nursing required. The Utilization-Based approach should also take into consideration existing and future requirements for human resource supply information from the professional bodies related to nursing. Such a model would allow for the estimation of human resource needs based on a variety of 'what if' scenarios (varying skill-mix patterns, etc.).



## Processes:

- To keep abreast of significant changes in surgical procedures and pharmaceutical advances, it will be necessary to carry out routine (possibly annual) surveys with key informants to determine anticipated effects of pending developments (e.g., reduced hospital stay resulting from new techniques in cardiac by-pass surgery). Once key factors have been identified then empirical evidence can be used to estimate the resource implications.
- To understand the advances in nursing roles (e.g., Advanced Practice Nurses (APN), midwives) it will be critical to continually monitor trends, and evaluate the effectiveness of professional roles and systematically determine the impact on resource requirements. Related to this is the need to evaluate the impact of different work environments on nursing human resources. For example, it will be important to incorporate results of the APN role contained in the proposed primary care demonstration projects for Nova Scotia into calculations of nursing human resource needs.
- To provide a comprehensive information source for demand forecasting, comprehensive, meaningful, accessible, and integrated and comparable data bases need to be developed in all sectors of the health care system (hospitals, home care, nursing homes and community nursing). An annual survey of all health care system sectors could include data sources such as those recommended by O'Brien-Pallas, et al., 1998):

- **Hospitals** (acute, psychiatric, and rehabilitation)

Utilization: annual separations, patient days, numbers of inpatient and outpatient procedures, and numbers of outpatient visits, including those to emergency wards.

Related factors: number of beds funded and in operation, occupancy rate, location (urban/non-urban), teaching status, and case mix.

- **Long term care** (nursing homes and homes for the aged)

Utilization: number of residents, average length of stay, numbers and length of short-term respite stays

Related factors: number of beds, location (urban/non-urban), non-insured costs, and case mix

- **Home Care** (acute and chronic)

Utilization (per program): number of clients, total visits (combined and by service), total travel time, total visit time (combined and by service), average visit frequency (e.g., weekly, twice weekly) and average length of stay.

Related factors: geographic location, informal caregiver availability, informal caregiver capacity to provide care, cost of non-insured services, and case mix.

- **Primary Care** (primary care physician or nurse practitioner, alternative health providers, community-based services)
    - Utilization: number of clients, annual visits, and average visit time
    - Related factors: travel distance to service, concentration of service providers, method of payment, case mix.
  - **Public Health** (prevention and intervention programs)
    - Utilization (per program): number of clients, annual contacts, contact frequency, average contact time, and average program development/preparation time
    - Related Factors: travel distance to services, concentration of service providers, method of payment.
5. To ensure that data bases are relevant, accessible, and meaningful, Nova Scotia should commit to a more accurate measurement of nurse workload and patient acuity, over the short-term. A commitment is also needed for a comprehensive and consistent workload measurement system throughout all sectors of the health care system over the long-term. It is further imperative that that this measurement system reflects the key elements contained in the Guidelines for Management Information in Canadian Health Care Facilities (MIS Guidelines). Such guidelines ensure that: (a) an appropriate infrastructure exists; and (b) the necessary types of information (including both statistical and financial) are available to enhance understanding about productivity and performance, to permit comparisons, and make critical decisions.
  6. Recognizing that supply data play a key role in HHR planning, that other jurisdictions and other national data repositories have ready access to such information, nursing-supply data needs to be similarly accessible in Nova Scotia. In addition, to maximize the opportunity to make meaningful HHRP decisions about nurses, the professional nursing bodies for RNs and LPNs need to regularly collect more precise data about a broader range of factors to better predict HHR requirements. Currently, registration information bases from these professional bodies serve as an excellent resource for data around such HHRP factors as demographics, and unemployment. However, the information is not routinely available to other stakeholders for research in HHRP-related areas. Additional information could also be used to make more meaningful predictions about nursing human resource requirements: e.g., regarding numbers of nurses and reasons for their migration out of the province; the number of nurses in province by sector (hospital, long-term care, home care, primary care); anticipated retirement age; leaves of absence from employment for parenting or education; preferred vs actual working hours using relevant categories (e.g., number of days/wk.); major issues affecting the worklife of nurses. To be truly useful, this information must be available to policy-makers and health human resource planners on an on-going basis.

7. The needs-based model should be the model of choice for HHRP, given that most experts agree it provides the most accurate and meaningful forecasting for nursing. However, the lack of appropriate health care data, measurement and management systems frameworks prohibits the use of this approach now, and necessitates that alternate models be considered. Therefore, we further recommend that the necessary infrastructure necessary for operationalizing the Needs-Based model be developed. Finally, we recommend that the Effective-Demand model be used as a way of developing that capacity for forecasting and as a way to investigate the economic implications and affordability of proposed changes in nursing resources.

**Process:**

- To identify population health need priorities, it will be necessary to regularly monitor levels of unmet needs (e.g., through routine population health surveys, public health surveillance systems, and enhanced health registries) and incorporate these data as a beginning mechanism for needs-based planning.
  - To understand the implications of such health needs on the demand for nurses, it will be necessary to monitor how nurses are used (e.g., roles, staff-mix) vis-à-vis these priorities.
  - To gather more useful information on nursing costs, an annual survey of facilities should collect data in all sectors of the health system (hospital, long-term care, home care, primary care). Information should address nursing costs as a percentage of total facility costs, and the hours and costs of varying staffing positions (casual, full-time, part-time hours).
8. The implementation of the preceding recommendations will require the generation of a HHR unit. Given the current concerns around nursing, we recommend that this unit begin with a focus on nursing. Similar units in other jurisdictions could serve as models and collaborators in this regard. We recommend that key stakeholders (government, providers, professional bodies, academic institutions, etc.) join together in identifying common research needs, existing research, resources for meeting those needs, available opportunities and obstacles to overcome in building a truly effective approach to health human resource planning for our province.

**Process:**

- To begin to determine an appropriate mission, composition and appropriate infrastructure, it will be necessary to hold a consultation forum with key stakeholders.

**Appendix**  
**External Expert Consultants**

- **Stephen Birch** - Centre for Health Economic and Policy Analysis, McMaster University
- **Stephen Lewis** - Institute for Health Policy Research, Saskatchewan
- **Linda Lee O'Brien Pallas** - Nursing Effectiveness, Utilization and Outcomes Research Unit, University of Toronto

**Provincial Consultations**

- Beth Floyd
- Bonnie Eagle
- Evelyn Schaller
- Brenda Payne
- Mary Foshay
- Eleanor MacDougall
- Heather Henderson
- Susan Clarke
- Kelly McKnight
- Barb Stonehouse
- Carol Meade Corkum
- Anne Mann
- Betty Mattson

## **Appendix K**

### **Workload Measurement Systems**

**EXECUTIVE SUMMARY**

The supply and demand of nurses within the health care system has always been difficult to quantify. With the projected nursing shortage in the near future, the increase in health care costs, and the increased emphasis on quality improvement, it has become more important to find a method of measuring objectively the workload of nurses. (Campbell et al 1997).

There have been attempts in Nova Scotia to implement Nursing Workload Measurement Systems (NWMS) for the purpose of matching nursing hours to patient care needs, to determine patterns of workload and to facilitate long term planning and staff management.

Other provincial jurisdictions have also implemented various types of NWMS for similar reasons. The purpose of this paper is to provide a status report on NWMS in Nova Scotia, a context of NWMS in other Canadian provinces and to determine if there are elements of NWMS that may be useful in the future to all health sectors such as long term care, home care and public health.

To fulfil these requirements, the information contained herein, was obtained from the literature, questionnaires, interviews with strategic informants, and feedback from the thirteen focus groups representing nursing from all health care sectors.

***Findings***

The major findings of this report are:

1. During the years of 1988-1997, NWMS were present in 25 acute care facilities in the province of Nova Scotia.
2. Long term care, Public Health and Home Care have limited experience with a formalized NWMS.
3. A project of the Department of Health supported the implementation of the Grasp ® System in 21 of the 25 acute care facilities between 1988-1991.
4. Six (6) of the twenty-one facilities continue with a NWMS using the system internally for staffing, trending and business planning in conjunction with other pertinent



indicators within their facilities.

5. Other provincial jurisdictions within Canada are at various stages with their provincial MIS systems. Provinces such as Newfoundland are considering implementing the generic MIS Workload Measurement System that will capture patient and non patient care workload. This is being used for nursing as well as other disciplines. Prior to this decision, stakeholders will be involved to sanction this as part of the provincial MIS strategy.
6. The vision for provincial management information plan for Nova Scotia has not been formalized.
7. Information from some strategic informants and focus groups have expressed that their experiences with NWMS have not been favorable overall. However, if staff were to buy into the re-implementation of NWMS, the system must be valid, evidence based, capture 100% of nurse's work, sensitive to workload demands, have the necessary resources for implementation and maintenance. The data should only be used as one indicator in conjunction with others such as professional judgement, environmental factors, or complexity of care.

### ***Recommendations***

1. It is recommended that a strategy for management information systems for the Province of Nova Scotia in collaboration with the stakeholders be clearly articulated and based on the following guiding principles:
  - a) A *STRATEGY* that is clearly defined and endorsed by all stakeholders,
  - b) A *STRATEGY* that is a provincial initiative which in conjunction with the regions/NDO's/all health sectors determines the data needs of the users,
  - c) A *STRATEGY* that will endorse a commitment from the users and is recognized on its merits,
  - d) A *STRATEGY* that will provide comprehensive data on health care consumer status, nursing interventions and client outcomes,

- e) A *STRATEGY* that will recognize that to obtain information, the appropriate resources must be available for ongoing development and maintenance,
  - f) A *STRATEGY* that will determine, prior to implementation of any particular system, that the benefits of having the system outweighs the cost of the implementing and maintaining the system.
2. It is recommended, that if the # 1 Recommendation is accepted then the provincial initiative must include the formation of an advisory committee comprising senior nurse leaders from all health sectors who will determine the common elements required to meet nursing's basic information needs.

**INTRODUCTION**

Quantifying the demand for nursing resources has always been a difficult task in the healthcare system. Nurses account for a large portion of the total budget of facilities making the utilization of nursing resources the highest priority to achieve effective and efficient delivery of care. With the looming nursing shortage predicted for the near future, Provinces including Nova Scotia are in the process of finding information that will assist in projecting the future number of required nurses.

There have been attempts in Nova Scotia as well as other Provinces to determine the demand for nursing services. The implementation of nursing workload measurement systems (NWMS) flourished in the 80's and 90's. In Nova Scotia, twenty-five acute care facilities had implemented NWMS, yet the ability to objectively determine staffing needs and total costing of nursing services is still a challenge.

The purpose of this paper is to determine the current status of NWMS in Nova Scotia, provide an update of the Canadian experiences with NWMS, and to determine if there are elements of NWMS that may be useful in the future to all health sectors such as long term care, public health and home care.

The information was obtained from a questionnaire, the literature, provincial and national strategic informants and from focus groups which represented nurses from all health sectors, professional associations, unions and practice settings.

**DEVELOPMENT OF NURSING WORKLOAD MEASUREMENT SYSTEMS**

The literature documents the existence of systems, formal or informal which measured nurse's work in the days of Florence Nightingale (Halloran 1990).

Nurses, including Florence Nightingale have always been able to assess the demands required to deliver quality nursing care based on sound professional judgement rather than documented standards. Post mid 1930's to mid 1960's with the growth of institutions the need to plan nursing resources on a fix bed to patient ratio emerged. This approach assumed that X number of occupied beds required X number of staffing. However it did not consider the principle that all patients are not equal in their care requirements.

John Hopkins Hospital in Baltimore was influential to divert the focus from the census to the individual patients who occupied the beds (Connor 1961). A patient classification system evolved which allowed nurses to assign patients to categories which included physical and emotional support needs and treatment. The emergence of direct nursing care index was computed on the basis of the average direct care times revealed through continuous observational studies (Giovannetti 1994).

The direct care index which took the number of patients in each category and multiplied by the average direct care times for that category was a method to determine the estimated direct nursing care hours for the next day. A constant for indirect care was also added to the numbers. This method assumed, patients had a minimal demand for nursing care on that a specific nursing unit and that any demand greater then the minimal number of hours would be provided to that unit from a float pool.

Connors and (1961) and colleagues established several principles requiring the measurement of nurse's work, which included that bed census alone is not an adequate indicator for the demand for nursing care. Workload varies from, shift to shift, unit to unit based on the complexity of the patient needs.

Since the work of Connors (1961) and colleagues similar findings have been found in other studies which have resulted in the proliferation of staffing schemes throughout the world (Giovannetti1991).

The term patient classification system was not considered inclusive of all of the components of nurses work. Therefore, the term patient classification system was replaced with the term nursing workload measurement system. Another reason to avoid the term "patient classification system" is the propensity for confusion with other patient classification approaches such as case mix groups, (DRG's), both refer to medical resource allocation systems (Giovannetti 1996). The terms "severity" and "acuity" are sometimes used synonymously for NWMS. However this again is not accurate as a patient's degree of illness does not necessarily equate to the intensity of the demand for nursing care.

In the 1960's and 1970's NWMS could be characterized as prototype systems, or factor evaluation systems. In using a prototype evaluation system, the patient is classified into a category or level of care that closely matches with the prototype description. Judgement of the nurse is very significant in the assessment. A factor evaluation system list the individual care interventions for each patient based on the nursing care plan. These nursing interventions and their associated time values are selected according to predetermined standards (care plans) and are combined to provide a total time requirement (White 1991). Direct (hands on care) and indirect care (tasks for the benefit of all patients on the unit) were the components of the factor evaluation system of the early 1970's. Since then the factor evaluation system have included assessment, teaching and emotional support, planning and evaluation activities.

During the decades of the 70's, 80's and 90's, four NWMS were the predominant systems used in Canada which included Grasp ® System, Nursing Information System for Saskatchewan (NISS), Project Research in Nursing (PRN) and Medicus System Corporation (Medicus).

### **GRASP®SYSTEM**

The Grasp ® System works on the assumption that 40-50 direct care activities in medical/surgical unit account for 85% of direct care time. Direct Care Time does vary from unit to unit and therefore each unit has their own specific tool. An adjustment factor is added to account for the activities that are not predictable. Indirect care hours are calculated for each nursing unit to determine the total care hours.

### **NURSING INFORMATION SYSTEM FOR SASKATCHEWAN (NISS)**

The Nursing Information System for Saskatchewan (NISS) is a tool which is a by product of the charting system. Patients are rated daily for the direct care required and the value for indirect care (which is determine by work sampling) is added to provide the total care hours.



**PROJECT RESEARCH IN NURSING (PRN)**

PRN 74 was an original Pediatric Patient classification tool base on research conducted at St. Justine's hospital in Montreal. The Later Version PRN 76, PRN 80 and PRN 87 were available for acute care units - medical, surgical, ICU, long term care units, nursing homes and psychiatric units. The form to measure the level of nursing care requirements has 214 factors within eight care groups (feeding, respiration, etc.) an exhaustive list without any allowance for unpredictable activities. Nurses, use the one form to measure the level of care of all patients. The patient care plan, which has a similar terminology as the workload form is used to plan care. The system can be placed on a microcomputer with the supporting software.

**MEDICUS SYSTEM CORPORATION**

Medicus was developed in 1972 in conjunction with Rush Presbyterian - St. Luke's Medical Centre in Chicago. Patient profiles describe the differences in the levels of dependance on nursing. The levels range from one to five (critical). In 1980, there were thirty-seven critical indicators based on nursing interventions, therapeutic intervention and patients conditions. Patients are classified daily based on patient needs. The indicators are assigned points and the total points will indicate the patient's type or class. The system is supported by an automated management information system or can be implemented manually.

With the availability of these systems, NWMS increased in facilities across Canada due to the developments of the federal/provincial initiatives in 1983.

**CANADIAN INITIATIVES**

The National Hospital Productivity Improvement Program (NHPIP), a joint cost shared federal/provincial government program was established in 1983. Its mandate was to develop promote, evaluate, maintain, approve and fund WMS primarily for support services department of facilities (White 1991). The MIS project was also established in the early 1980's and were responsible in publishing Guidelines for Management of Information Systems in Canadian Health Care facilities.



The MIS project encouraged provinces to endorse the guidelines and in particular to encourage the use of NWMS data as the key link with financial and statistical reporting for both the departmental and global reporting. The MIS project encouraged all service departments to use the NHPWP WMS. Health and Welfare Canada produced manuals detailing the systems. Since a NWMS was not developed by NHPWP, nursing departments could utilize the existing vendors of NWMS. A list of eighteen criteria developed by the MIS project were used to evaluate the various NWMS. To be compliant with the MIS guidelines, nursing departments across the Country implemented systems based on the MIS criteria. Ten test sites were selected, one for each province to pilot the MIS guidelines. A national MIS nursing advisory group was formed to review the limitations pertaining to the comparability, validity, reliability of NWMS.

### **LIMITATIONS WITH NWMS**

Although NWMS have been available for some time in Canada, the literature cites several limitations with NWMS.

O'Brien-Pallas, Cockerell & Leatt (1992) reported that NWMS systems do not adequately capture the complexity of nurse's work. In a recent study of O'Brien-Pallas et al (1997) which moved beyond the traditional approach of examining direct and indirect care, the variables of patient nurse condition, medical condition, care giver characteristics, and the environment were studied to determine the intensity of nursing work. Their findings concluded that nursing diagnosis are a more sensitive measure of the complexity of conditions in patients that create a demand for nursing care than medical diagnosis. The study also suggests that the patient's medical condition has a great influence on nurse's work.

Stelling (1991) cited that much of nurse's work is invisible in nature and involves not only organizing the patient and the environment and completing non nursing tasks, but rescheduling work to accommodate unanticipated events and delays caused by others.

Another limitation of NWMS is their reliability and validity (Hernandez & O'Brien-Pallas 1996). O'Brien-Pallas and colleagues have demonstrated in two separate studies that the hours of care estimates of four different systems (Grasp®, MIS, Medicus or PRN) are highly correlated and there are significant differences between the estimates. In both

studies, the differences in the hours of care were related to the measurement approach used e.g. standard care times versus average care times and the number and nature of care indicators (Nursing Task Force Report MIS - Cockerell, O'Brien-Pallas, Bolley & Pink 1993.)

Knowing that the systems are noncomparable, provinces were using the hours of care from NWMS as the basis for costing nursing services. Using workload measurement systems as the basis of a proxy for determining nursing costs pushes these systems far beyond the purpose for which they were created (Giovannetti 1994; O'Brien-Pallas and Giovannetti 1993).

The Nursing Task Force Report of Nova Scotia in 1993 recommended that NWMS be reexamined as they do not reflect nursing work or patient care needs, but are based on the principles of accounting.

The National Task Force Report on NWMS (MIS Group 1993) reviewed five major issues with NWMS and developed recommendations. The issues included the use of WMS data for costing nursing services, external reporting requirements of using retrospective data, the data elements and definitions associated with the collection and reporting of workload measurement data, the use of workload data for comparative reporting purposes, and WMS data quality considerations.

The Task Force recommended that NWMS continued to represent the most practical approach available for costing purposes however, cautioned that the nursing outputs are only proxy measures until an acceptable alternative is available. The Task Force encouraged future investment in system development, targeted at having a system as a by product of documentation, linked to patient care and administration systems, capable of reflecting complexity, severity and skill mix, fully automated and incorporate essential data for a standardized nursing data set. In regards to comparing data from NWMS, the Task Force stated, further research is required to resolve problems related to system differences. Users of the data must take into account any potential limitations of the systems. Enhancements and revisions were recommended to the MIS project based on these recommendations.

**NOVA SCOTIA'S EXPERIENCE WITH NWMS**

Nova Scotia's Workload Measurement Systems primarily existed within the acute care facilities of Nova Scotia. Other sectors such as long term care, Home Care (VON) and Public Health do not have formalized NWMS. Staffing ratios for long term care were determined by the Department of Health and were used as staffing guidelines for long term care facilities.

Public Health determined their demand for service by having the ratio of one (1) RN to x number of population and this varies from region to region and province to province.

Being committed to the MIS project, the NS Department of Health established a task force on NWMS, in January 1985. The task force recommended in May 1987, that a Grasp® like system be implemented over a three (3) year period in all acute care facilities of over 100 beds and two (2) community hospitals in Nova Scotia. Several hospitals in the province had been using NWMS in the past. The Victoria General Hospital in Halifax was using NIS and then implemented Medicus while the Nova Scotia Hospital, Halifax Infirmary and Valley Regional Hospital initiated the Grasp® System.

Based on the findings of the task force reports, a provincial workload steering committee was formed in January 1988. After reviewing several workload measurement systems, the committee recommended that the vendor Comprehensive, Health Care Consultants (CHCL) would implement the Grasp® System in selected twenty-one hospitals within the province (see Appendix A ).

Implementation commenced in October 1988 and was concluded by September 1991. A project coordinator was hired at each site to implement the project and to meet with their counterparts to identify the needs associated with implementation phase and ongoing development of the system (McCara 1999).

The Department of Health's goal for implementing NWMS was to develop a provincial database that would establish the average hours of care per patient with the intent of developing a new staffing formula for acute care facilities. The facilities viewed this as an opportunity to obtain more information to aid in staffing, determining skill mix, assist in supporting budget preparation internally and externally. Funding to facilities at that time was quite variable and based on each facilities projected patient care needs.

The Grasp® Maintenance Committee was established in 1993 post implementation phase with the ongoing support of a provincial consultant to assist in further developing and maintaining the system.

During the time of implementation and post implementation, several others initiatives were unveiled such as the Report on the Task Force on Nursing (1993) and the proposal to organize Nova Scotia by health regions/and nondesignated facilities. Also, many facilities were experiencing budget reductions, which led to further fine tuning of practices within organizations.

Meanwhile, the NWMS was used internally to predict staffing for the next shift, determining hours of patient care per unit, to compare actual hours per patient/day to budgeted hours, trending, validating workload, resource allocation and to assist in making decision for short and long term planning.

Most facilities submitted monthly reports on the hours of care to the Department of Health to support the database development. Since the implementation of NWMS in Nova Scotia, the status of NWMS has significantly changed in the province which is noted in the findings.

## **CURRENT STATUS OF NWMS IN NOVA SCOTIA AND CANADA**

In Nova Scotia NWMS were implemented mainly in twenty-five acute care hospitals between 1988-1991. Long term care facilities, Public Health and Home Care have limited experience with NWMS. NWMS of the twenty-one acute care facilities was implemented as part of the project sponsored by the Department of Health. Currently six (6) of the twenty-one hospitals are using the data from NWMS to manage resources internally, while the remaining 15 facilities have discontinued their systems (see Appendix A).

Originally, one of the reasons NWMS were implemented in Nova Scotia was to support the National MIS plan to meet departmental reporting requirements. Currently, Nova Scotia does not have a province wide strategy for implementing the National MIS guidelines (Hersey, F 1999).

Due to the changes in health services organization, such as program management, multidisciplinary teams, a new framework was developed by the Canadian Institute of Health Information (CIHI) and implemented as part of the 1996 revision to the MIS



guidelines.

This generic MIS system categorizes work as Services Recipient Activities (patient care) and Non-Service Recipient Activities (non-patient care). This generic tool can be used for all disciplines including nursing. Several hospitals that have NWMS are expanding non-patient care categories to their respective NWMS tools (MacDonald, 1999).

Each province within Canada have had varying experiences with the collection of WMS data (see Appendix B). A recent survey by the New Brunswick Department of Health and Community Services reported the following findings. In Ontario, a recent survey by the Nursing Professional Advisory Group was established in 1996 to examine issues related to nursing data collection and reporting. Workload reporting was mandated by the Ministry of Health for the fiscal year 1997-98. Not all hospitals were able to meet the reporting deadline, however workload data is being reported at the departmental level. Several hospitals have committed to collect WMS data and to report at the global level. Hospital involved in the case costing projects are required to submit data in a digital form. The major challenges for Ontario to automate the NWMS is the integration of NWMS with other hospital information systems and to communicate the relevance of NWMS to front-line staff. The reliability of the WMS data varies within Ontario.

In British Columbia, there is not a province wide strategy to implement the MIS guidelines. However, NWMS inpatient and ambulatory care data requires additional reliability measures.

In Alberta, MIS has been implemented in all sectors including acute care, long term care, and Public Health. Funding for the Regional Health Authority in Alberta is calculated using a Population Based Funding formula, which does not need NWMS data at the provincial level.

MIS data is used in most districts in Saskatchewan which is congruent with their Mis provincial plan. There is no plan to initiate a province wide strategy to collect workload measurement data until the MIS guidelines are fully implemented. Plans to automate systems are not relevant to Saskatchewan at this time, as the district health boards have different priorities.

The districts within Manitoba use MIS and it is their goal to have all districts using MIS within two years. The departmental dimension of MIS was not completely implemented. There is no strategy in place currently to implement WMS at this time in all facilities or to move to the global dimension reporting requirements of MIS. The major

challenges in automating WMS at the provincial level is the lack of resources (time/people/money) and the outcomes have to be useful as a management tool for the user and manager.

Workload Measurement Data is not being used in funding. Disciplines are not mandated to collect WMS data except lab, diagnostic imaging, physiotherapy and occupational therapy, and their systems vary in regards to reliability.

The Province of Quebec does not have a provincial MIS strategy at the Ministry level. The Quebec Ministry supported a project call SIRACDOF for 10 years with seven hospitals of different sizes participating. This project's objectives were to explain the costs based on clientele structures, comparing costs to the DRG. As of the Spring of 1998, the project funding has been put on hold as the project is being reconsidered. Two (2) hospitals, the Royal Victoria's Hospital and the Montreal General Hospital have implemented a case costing strategy.

In New Brunswick, the Department of Health initiated provincial working groups for all disciplines. Nursing is using the Grasp ® System as an internal system in most of the corporations for predicting staffing and scheduling. The Ministry does not require reporting of WMS data. They are in the process of considering automation of WMS data. Case costing is not being considered at this time. Their primary initiative currently is building clinical and financial performance indicators in order to obtain a comprehensive picture of the health care system.

In Nova Scotia reporting is done at the functional level and two (2) hospitals are capturing patient specific data. The major challenge in automating WMS is the standardization to one vendor and to overcome the interface issue of current WMS automated systems with hospital information systems. Non-patient care workload data is collected by allied health disciplines and nursing in some facilities is considering refining their system in this area.

In Newfoundland, a provincial steering committee is very active with their MIS strategy. WMS are promoted and are partially implemented. They have two (2) coordinator positions who facilitate, update and introduce WMS in all clinical disciplines. There is no provincial plan to automate, but each regional board will automate as it can, using the Meditech ® System mainframes. The major challenge in automation is that each region varies in available resources and technology.



**FINDINGS**

Implementing and maintaining information systems requires a large commitment from many stakeholders, such as governments, regional boards/NDO's, users and others. The Nova Scotia experience of implement NWMS and continuing with these systems faced many barriers for their success. The reasons cited for their discontinuance are as follows:

- Expectations regarding the benefits and uses of a NWMS was not clearly identified prior to implementation of NWMS in Nova Scotia by the Department of Health or the facilities. The hours per patient per day (HPPD) were to be used and submitted to the DOH to build a provincial data base. Yet the DOH did not have the appropriate hardware/software or human resources to input the data. The acute care facilities continued to use the data for internal purposes and not for external reporting requirements.
- NWMS were implemented at a time when facilities were being asked to reduce budgets. Beds were decreased in some areas which changed patient mix, lengths of stay and therefore created the need to constantly update newly implemented NWMS tools.
- Resources were provided for the implementation phase, however, limited resources were available in post implementation phase, a time in which patient care charts required further development and refinement.
- The formation of regions occurred bringing with this change - new organizational structures and commitments. Many of the original project coordinators of the NWMS changed roles.
- NWMS were implemented as stand alone, manual systems and were viewed as an add on to the nursing staff's workload.
- Nursing staff were dissatisfied with NWMS as evidenced in the Nursing Task Force Reports (1993). The report cited that it did not capture the true workload of nursing.
- The direction and commitment to MIS for the Province of Nova Scotia was not known to many users of the system. To suggest that the nursing community re-implement a NWMS without knowing the direction and commitment of the provincial MIS strategy would not be suitable.

## RECOMMENDATIONS

1. It is recommended that a strategy for management information systems for the Province of Nova Scotia in collaboration with the stakeholders be clearly articulated and based on the following guiding principles:
  1. A *STRATEGY* that is clearly defined and endorsed by all stakeholders,
  2. A *STRATEGY* that is a provincial initiative which in conjunction with the regions/NDO's/all health sectors determines the data needs of the users,
  3. A *STRATEGY* that will endorse a commitment from the users and is recognized on its merits,
  4. A *STRATEGY* that will provide comprehensive data on health care consumer status, nursing interventions and client outcomes,
  5. A *STRATEGY* that will recognize that to obtain information, the appropriate resources must be available for ongoing development and maintenance,
  6. A *STRATEGY* that will determine, prior to implementation of any particular system, that the benefits of having the system outweighs the cost of the implementing and maintaining the system.
2. It is recommended, that if the # 1 Recommendation is accepted then the provincial initiative must include the formation of an advisory committee comprising senior nurse leaders from all health sectors who will determine the common elements required to meet nursing's basic information needs.

## CONCLUSION

Implementing and maintaining NWMS requires commitment, ongoing resources, and a clearly definite strategy that outlines their benefits to the stakeholders of the system.

In order to have a comprehensive strategy, stakeholders must define their requirements for information, an implementation plan that includes appropriate resources and an evaluation plan that constantly monitors the benefits of information. Until a strategy is formulated and stakeholders have an obvious commitment to the plan, the re-implementation of collecting NWM should then be re-examined.

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01 March 1999

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10 March 1999

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08 March 1999

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Fredericton, NB

12 March 1999

**FOCUS GROUPS**

Senior Nurse Leaders

26 February 1999

Information from the 13 Focus Groups  
Wayne Marsh/Gail Boom

## APPENDIX A

HOSPITALS - IMPLEMENTATION OF THE GRASP ® SYSTEM - DOH Project  
and  
THE NUMBER OF HOSPITALS USING GRASP ® SYSTEMS 1999

Implementation 1988-1991Using Grasp ® 1999

1.	Izaak Walton Killiam Hospital	√
2.	Camp Hill Medical Centre	√
3.	Grace Maternity Hospital	√
4.	Yarmouth Regional Hospital	D/C
5.	Sydney Community Health Centres	N/A - merger
6.	Sydney City Hospital	N/A - merger
7.	Cape Breton Hospital	N/A - merger
8.	Glace Bay Community Hospital	D/C
9.	Glace Bay General Hospital	D/C
10.	Northside Harborview Hospital Corporation	D/C
11.	Dartmouth General Hospital	√
12.	Nova Scotia Rehabilitation Centre	√ Merger with QEII
13.	Hants Community Hospital	- D/C
14.	Fishermen's Memorial Hospital	- D/C
15.	Soldier's Memorial Hospital	- D/C
16.	South Shore Regional Hospital	- D/C
17.	Highland View Hospital	- D/C
18.	All Saint's Hospital	- D/C
19.	Colchester Hospital	- D/C
20.	Aberdeen Hospital	- D/C
21.	St. Martha's Hospital	- D/C

Note: Nova Scotia Hospital - using a workload measurement system

## APPENDIX B

## PROVINCIAL MIS SURVEY

Yes (x) No (-)

	BC	Alta	Sas k	Man	Ont	Que	NB	NS	NF
Province with the strategy to implement national MIS guidelines	-	x	x	-	x	-	-	-	x
Strategy present to collect WMS data	-	-	-	-	x	-	-	x	x
Workload measurement data reported at functional centre <i>versus</i> global level	-	x	-	x	x	-	-	x	x
Plans to automate workload measurement system	-	-	-	-	-	-	-	x	-
Established provincial MIS steering committee	-	-	-	-	-	-	-	-	-
Workload measurement data used for funding by Department of Health	-	-	-	-	-	-	-	-	-
Reliability of workload measurement data	-	-	-	-	-	-	-	-	-



## **Appendix L**

### **Focus Group Sessions**

# **The Marsh Report: Focus Group Summary**

## **Background**

A number of factors are suspected to be affecting the demand for and supply of registered and licensed practical nurses in Nova Scotia. Stakeholder consultation was one of the strategies adopted by the Nova Scotia Department of Health, in partnership with the Nova Scotia Association of Health Organizations and the Registered Nurses Association of Nova Scotia, to explore issues concerning:

1. Staff Mix
2. Casualization of Nursing Workforce
3. Recruitment & Retention
4. Nursing Workload Measurement Systems
5. Nursing Education Programs

## **Focus Groups**

Twelve focus groups provided the vehicle for stakeholder consultation. Their input would contribute to a comprehensive provincial strategy for achieving and maintaining an optimal and stable nursing work force that meets the health care needs of Nova Scotians.

One hundred sixty-six nurses were drawn from a variety of stakeholder groups and all four region for the three-hour sessions. Fifteen participated via teleconference. Volunteers from each focus group later attended a two-day follow session, along with representatives from unions, professional associations, educational institutions and employing agencies. The main purpose was to reach consensus on key issues affecting nursing human resource planning, to identify potential solutions for the higher priority issues, as well as critical success factors and steps needed to sustain momentum behind these initiatives for the longer haul.

The product of these consultations will be blended with the results of several Department research initiatives and work that has gone on before. The intention is to create a comprehensive provincial strategy for achieving and maintaining an optimal and stable nursing work force that meets the health care needs of Nova Scotia.

## **Objective**

The overall objective is to prepare draft strategies that will be considered, along with other research results, by a smaller group of key decision-makers at an upcoming implementation planning session. Specifically, to reach consensus on key issues affecting

## Nursing human resource planning.

1. **To identify potential solutions for the higher priority issues:**
  - (a) conservative, near-term opportunities for action;
  - (b) medium-term initiatives for rapid research and refinement;
2. **To identify for the higher priority issues;**
  - (a) key types of players to be involved in follow-through;
  - (b) time lines/milestones for completion;
3. **To identify critical success factors and steps needed to sustain momentum behind these initiatives for the longer haul.**

## The Focus Group: Issues and Key Findings

Is there a nursing crisis in Nova Scotia? The vast majority of participants in twelve focus groups administered for the Department of Health would say "Yes, without a doubt!". They described the features of the crisis they see through the five topics chosen by the Department to frame the issues. They are as follows:

### **Staff Mix**

These nurses were concerned that inappropriate staffing strategies, perceived as being driven primarily by cost constraint, are fragmenting service delivery. They feel strongly that care requirements, determined from a holistic perspective, must be the lead variable for deciding which resources (educational preparation, experience/proficiency and skillsets) will be assigned to each patient/client. Greater clarity is needed around the scopes of practice for each nursing discipline.

### **Casualization**

This is perceived to be one of, if not the most significant factor fueling the present crisis. Nurses are said to be reaching the limit of their patience with employment arrangements that they consider to be unfair and not in the best interests of the patient/client. They need greater predictability around their work schedules and incomes. They would like to see the role to be played by the casual component of the work force defined clearly and managed honestly.

## **Recruitment & Retention**

To repeat the theory of most of the groups interviewed, "Fix the casualization and quality of work life issues and you will go a long way toward solving the recruitment and retention problems". There are also disincentives associated with support for education and with a rough transition experienced by most new graduates entering the work force.

## **Nursing Education**

The nurses interviewed, perceive opportunities for greater consistency between what is taught in nursing education programs and what they are permitted to practice in various settings. Another common issue is the perceived inadequacy of hands-on, clinical experience being received by university-trained students prior to graduation. And participants were looking for greater continuing education support from employers for all types of nurses in the field.

## **Nursing Workload Measurement Systems**

While few participants had positive experiences with workload measurement, most groups were able to say what it would take for these systems to add value to their working lives and to the quality of care delivered.

## **Summary Remarks**

Is there really a shortage of nurses in Nova Scotia? Certainly for the near term, the participants would say there is. Most of those interviewed live the effects of it daily. The range of implications they described can be found throughout this report.

But the 166 focus group participants weren't as unified around how long the shortage would have to be endured if serious steps could be taken to address the issues. Many feel that if the Government would play a facilitative role and continue the process of stakeholder dialogue, the situation might be reversed. Some health service organizations that have tackled the issues with tough decisions have seen the trends reverse on a small scale. Many participants feel that nurses who have left the province would return to Nova Scotia if the situation could be addressed effectively and honestly. Those who have abandoned a profession that they say has lost its attractiveness, might come back to nurse again.

"We're not saying anything new. The issues have been the issues for 10 years". Participants involved in prior studies and task forces are skeptical that things will change. They've heard it and helped to say it all before.

## **The Two Day Session: Proposed Recommendations And Supportive Strategies**

### **A. STAFF MIX: INTENDED RESULTS**

The most appropriate providers deliver the care required in each practice setting. Skill mix is based on client needs (acuity / complexity of care) and professional judgement (trusting the people in the field).

Key stakeholders clearly understand RN, LPN, & UAP roles and responsibilities. UAP education and performance complies with commonly accepted standards. UAPs feel valued and respected for their contributions.

Structures and processes in practice settings ensure that the patient care perspectives (i.e. the views of physicians, nurses and patients/ clients ) are considered when staff mix decisions are made. All providers feel valued and respected for their contributions.

### **Recommendations**

#### **Match Care Requirement and Staff Mix (Crisis Response)**

##### **Supportive Strategies:**

- Reinstatement of LPNs to Proper Scope & Remuneration
- Examine the Role of UAPs
- Change the Homes for Special Care Act

#### **Match Care Requirement and Staff Mix (Short to Medium Term)**

##### **Supportive Strategies:**

- Clarify Nursing Roles & Educate Stakeholders
- Conduct Pilot Projects as needed

#### **Education and Practice Standards for Unlicensed Assistive Personnel (within 3 months)**

##### **Supportive Strategies**

- Develop education and practice standards by sector for unlicensed assistive care providers

## **B. CASUALIZATION: INTENDED RESULTS**

Casual employment is restricted to time- limited assignments that cover emergency and other unforeseen staffing requirements.

A new definition of 'casual' staff has been adopted and accepted in practice. Employers deploy permanent vs, casual resources using management information generated by a generally accepted staffing model specific to each practice setting.

Casual staff are treated with respect and consideration that is no different from that given to others in a practice setting. Many now say, "I want to be a casual because I am good at it and because everyone recognizes and values my expertise ", rather than, " I'm a casual because I can't get other work."

Work and caseloads are fair relative to others in a practice setting and relative to their own educational preparation, experience / proficiency and skillsets.

Casual staff develop skills via relatively consistent clinical assignments with respect to practice setting, patient population, nature of service, etc. They have access to continuing education and development opportunities that are reasonable, relative to other nurses.

A reliable supply of qualified nurses who centrally recruited, employed and developed to meet specific nursing care requirements. Flexible deployment in responses to the evolving needs of the geographic area served.

Long Term Care employers no longer have to reach to agencies for casual relief because they cannot find staff for full and part-time positions.

## **RECOMMENDATIONS**

### **Improve Decisions Based on a Standard Model and a New Definition for Casual Employment**

#### **Supportive Strategies**

- Introduce a Staffing Model
- Empower the Decision-Makers
- Fund Permanent Employment



## **Integrate, develop and value casual staff**

### **Supportive Strategies**

- Match work with Competencies
- Provide Appropriate Orientation
- Balance Work and Personal/Professional Needs
- Provide Continuing Education
- Reinforce the Value of the Casual Workforce
- Make Casual Work more Attractive

## **Innovative organization, deployment and remuneration**

### **Supportive Strategies**

- Create Shared Pools of Specialized Skills and Expertise
- Provide Appropriate Incentives

## **Long Term Care**

### **Supportive Strategies**

- Settle Collective Agreements in LTC sector
- Revise Nursing Education Program

## **RECRUITMENT & RETENTION: INTENDED RESULTS**

Nursing is viewed as an attractive profession by practicing nurses, and by those considering nursing as a career. Many major factors contributing to burnout have been addressed. New and experienced nurses choose to practice in Nova Scotia as the result of a formal, comprehensive and effective provincial recruitment initiative.

The government's full endorsement of the BScN program, with strengthened clinical components, as the entry to RN practice. Improved access to and quality of all forms of nursing education for both active, practicing nurses as well as those wanting to return to practice.

## **RECOMMENDATIONS**

### **Improve Quality of Working Life**

#### **Supportive Strategies**

- Crisis Response - Move Quickly on What is Already Known
- Establish the Required Full & Part-Time Complement
- Standardize Practice Across Sectors
- Continuously Assess Quality of Work Life

### **Provincial Recruitment Strategy**

#### **Supportive Strategies**

- Establish a Collaborative Group
- Introduce the Role of Provincial Recruiter

## **NURSING EDUCATION: INTENDED RESULTS**

The government's full endorsement of the B.ScN program, with strengthened clinical components, as the entry to the RN practice.

Improved access to and quality of all forms of nursing education for both active, practicing nurses as well as those wanting to return to practice.

## **RECOMMENDATIONS**

### **Endorse & Strengthen the BScN as the Entry to RN Practice**

#### **Supportive Strategies:**

- Enhance the BScN program include:
- Graduated Programming & ' Bridging' - to assist LPNs and diploma prepared RNs to acquire a baccalaureate degree

### **Strengthen Support for Education**

#### **Supportive Strategies:**

- Financial Support for Improved Access to continuing education
- Improved Access to Rural Areas
- Enhanced Clinical Component -B.ScN
- Clarify Employers' Role & Confirm Commitment
- Create Better Stakeholder Partnerships

In addition to the various proposals specific to the four issues addressed, the participants made three strong recommendation.

**1. Nursing human resource issues must be addressed within the broader context of health system utilization.**

Consensus is needed amongst all key stakeholders in the health system, concerning answers to questions such as these:

- (a) Is the most appropriate person providing the right care in the right place at the right time?
- (b) Who is responsible for quality of care?
  - An accountability framework must be introduced
  - Physician practice variability must be taken into account.
  - The public's expectations must be managed.

**2. Averting a nursing crisis on the long run will require an integrated Health Human Resource Management Information System (HRMIS).**

The overall research and consultation effort has been hampered by the lack of reliable and valid health human resource information. While the recommendations in this report should not be stalled by this fact, the Province must introduce an effective HRMIS that:

- (a) Provides regular reports to key stakeholders:
- (b) Help assess the relationship between human resource decisions and patient/client outcomes.

The participants believe that the lack of such information will prevent permanent solutions for the long term.

**3. Stakeholder session participants must be mutually accountable for follow-through.**

So as to sustain the momentum established by these 2 days, it is recommended that the stakeholders meet within 6-7 months to evaluate progress toward the outcomes of these proposals.

## **Appendix M**

### **Patient Care Leadership Group**

## PATIENT CARE LEADERSHIP GROUP

Mary Foshay	V.P. Operations Eastern Regional Health Board
Sheila Profit	V.P. Community Health Eastern Regional Health Board
Beth Floyd	Nova Scotia Hospital
Chris Power	V.P. Patient Services QEII Health Sciences Centre
Evelyn Schaller	V.P. Patient Services Cape Breton Health Care Complex
Barb Oke-Kennedy	Site Manager Dartmouth General Hospital Central Regional Health Board
Brenda Payne	Executive Director, Patient Care Services Northern Regional Health Board
Cathy Walls	Chief of Nursing IWK Grace Health Centre
Betty Mattson	Program Manager, Nursing Eastern King's Memorial Western Health Region

**Appendix N**

**Ad Hoc Nursing Research Steering Committee**



## **AD HOC NURSING RESEARCH STEERING COMMITTEE**

Rick Cameron, Chair	Department of Health
Helen Patriquin	Nova Scotia Association of Health Organizations
Patricia Bland	Registered Nurses Association of Nova Scotia
Albert MacIntyre	Licensed Practical Nurses Association of Nova Scotia
Heather Henderson	Nova Scotia Nurses' Union
Ian Johnson/ Carole Meade- Corkum	Nova Scotia Government Employees Union
Pam Reid	Nursing Advisor, Department of Health
Pam Jones	Research Officer, Department of Health
Susan Anderson	Policy Analyst, Department of Health

**Appendix O**

**Focus Group Wrap-Up Session**

## **FOCUS GROUP WRAP-UP SESSIONS**

### **ATTENDEES**

#### **Senior Administration**

Lloyd Brown	Long Term Care
Bonnie Eagle	VON
Evelyn Schaller	Cape Breton Healthcare Complex
Mary Foshay	Eastern Region
Brenda Payne	Northern Region
Cathy Walls	IWK Grace Health Centre
Beth Floyd	Nova Scotia Hospital
Ann Miller	Central Region
Chris Power	QE11 Health Science Centre
Eleanor MacDougall	Home Care Nova Scotia
Dr. Ed Kinley	
Barbara Stonehouse/Rick Nurse	IWK Grace Health Centre
Helen Patriquin	NSAHO

#### **Front Line Providers**

Pam Robichaud	RN, Acute Care
Jennifer Nauss	RN, Acute Care
Lynn Hardy	RN, Long Term Care
Cathy Pace	LPN, Home Care
Ruth Feltmate	LPN, Acute Care / NSNU
Heather Henderson	RN, Acute Care / NSNU
Carol Meade- Corkum	RN Union Rep.
Marlene Spencer	LPN Union Rep.

#### **Educators and Professional Associations**

Ann Mann	LPN Licensing Board
Alberta MacIntyre	LPN Association
Carolyn Moore	RNANS
Michele Brennan	RN Education
Ellen MacFarlane	RN Education
Barb Downe- Wambolt	RN Education
Susan Clark/E.A. Macdonald	NS Council on Higher Education
Bill Cruden	NS Community Colleges
Betty Cutcliffe	LPN Education
Doug Tuck	RN Education

**Nurse Managers**

Carolyn Maxwell  
Theresa MacLeod  
Mary Anderson  
Anne Kennedy  
Janis Brown  
Hope Beanlands  
Sheila Profit

VON  
Long Term Care  
Acute Care  
Long Term Care  
RNANS Board Member  
Public Health  
Community Health

**Department of Health**

Wade Were  
Sandra Cook  
Julie Quingley  
Bob St. Laurent  
Bill Lahey

Department of Health  
Department of Health  
Department of Health  
Department of Health  
Department of Health

## **Appendix P**

### **Ad Hoc Special Nursing Advisory Group**

## AD HOC NURSING SPECIAL ADVISORY GROUP

Carol Meade-Corkum	RN, NSGEU
Heather Henderson	RN, NSNU
Marlene Spencer	RN, Acute Care
Hope Beanlands	Department of Health
Lloyd Brown	Northwoodcare Inc.
Bonnie Eagle	VON, NS
Ann Mann	LPN Licensing Board
Albert MacIntyre	LPN Association
Carolyn Moore	RNANS
Janis Brown	RNANS Board Member
Ellen MacFarlane	St. F.X. School of Nursing
Barb Downe-Wambolt	Dalhousie School of Nursing
Michele Brennan	QEII Health Sciences Centre
Beth Floyd	Nova Scotia Hospital
Cathy Walls	IWK Grace Health Centre
Chris Power	QEII Health Sciences Centre
Evelyn Schaller	Cape Breton Healthcare Complex
Ann Miller	Central Region Health Board
Brenda Payne	Northern Region Health Board
Mary Foshay	Eastern Region Health Board
Betty Mattson	Western Region Health Board
Marguerite Rowe	Western Region Health Board



## **Appendix Q**

### **Environmental Scan**

## National Comparisons of Registered Nurses Employed in Nursing

According to the Canadian Institute for Health Information, the number of registered nurses employed in Canada decreased by 3.4% from 1993 to 1998 (Table 1). The decrease in Nova Scotia over the same period was 6.6%, the greatest percent decrease in the country. As a result, Nova Scotia's number of registered nurses employed in nursing per 100,000 population fell from second to fourth in Canada over the five-year period (Table 2). The decrease in ranking for Nova Scotia was second only to Ontario. With recent nursing initiatives in other provinces (as outlined below), Nova Scotia's ranking will be pushed further, at least into fifth place.

### Nursing Investments in Other Canadian Jurisdictions

- **Ontario** - \$375 million new dollars (a total of 10,000 RN and LPN positions) would be allocated to nursing;
- **British Columbia** - approximately 1000 new nursing positions will be funded at a cost of \$50 million over three years;
- **Manitoba** - \$7 million dollars to recruit and retain nurses through direct incentives and increased access to education programs;
- **Saskatchewan** - \$9 million for the creation of 200 new nursing positions;
- **Alberta** - 1,000 new front line staff;
- **Prince Edward Island** - \$5.5 million, in the 99-00 fiscal, specifically to hire more nurses and front line staff; 35.5 front line staff positions in 98-99; 21.1 in 99-00 (\$825,000); 11 front line staff support positions in 99-00; plus an additional \$3 million in their budget to hire 60 new nurses;
- **New Brunswick** - \$7.7 million in nursing (154 new nursing positions).

The decrease in registered nurses employed in nursing in Nova Scotia was accompanied by a 4.9% decrease in physicians from 1993 to 1997 (Table 3), but by an increase in specialists of 3.4% (Table 4). Compared to the province's fifth-ranking position for employed nurses to population ratio, both the physicians and specialists per 100,000 population remained third in Canada from 1993 to 1997 (Tables 5 and 6, respectively).

While Nova Scotia's ratio of employed nurses per population remains above the national average, the ratio of nurses to physicians and specialists ranks low compared

to other parts of the country. As shown in Table 7, there were 4.9 employed registered nurses per physician in Nova Scotia in 1997, which was the eighth position when compared to the other provinces and territories. The 1997 ratio remained unchanged from 1993. The number of employed nurses to each specialist in Nova Scotia was 10.2 in 1997 which was also eighth in the country but had decreased slightly since 1993 (Table 8).

## **National Comparisons of Select Registered Nurse Characteristics**

Apart from differences in overall numbers, certain characteristics of the Nova Scotia nursing workforce differ from their Canadian counterparts. As an example, the supply of nurses available to compensate for increased retirements and to meet increasing demand for nursing services in this province is relatively small compared to the national average. Of the total number of Registered Nurses registered to practice in Nova Scotia in 1997, approximately 96% were employed in nursing compared to 87% for Canada overall, meaning there is a smaller "surplus" supply than in most other provinces and territories (Registered Nurses Management Data, Statistics Canada, 1997).

There are also differences in how registered nurses are distributed throughout the health care system. Despite efforts to shift the health care focus away from acute care, in 1997 a greater portion of registered nurses in Nova Scotia were employed in an acute care setting than there were for Canada as a whole. Specifically, as shown in Table 9, there was a higher percentage employed in hospitals, mental health institutions and rehabilitation centres. Conversely, a lower percentage were employed in nursing homes, community health agencies, physicians offices and educational institutions relative to the national average.

## **Interprovincial Comparisons of Acute Care Services**

Traditional indicators of efficiency in the acute care sector include patient days, bed numbers and average length of stay. While patient days per 1000 population have decreased throughout the country over the past decade, Nova Scotia's rate is higher than most other provinces (Figure 1). Acute care beds have also been decreasing throughout the decade. Interprovincial comparisons for 1997/98 show that Nova Scotia is at about the mid-point at 3.4 beds per 1000 population (Figure 2). The average acute care length of stay in Nova Scotia has decreased gradually since 1993 with a slight increase in 1997/98. The province has the second highest average length of stay in Canada at 7.8 days (Figure 3).

## Indicators of Health Status

In terms of the relative health status of Nova Scotians compared to residents of other provinces of Canada, select indicators suggest we are among the worst. As shown in Table 10, Nova Scotia has the third from lowest life expectancy at birth, as well as the third from highest Standardized Mortality Rate. Nova Scotians have the lowest rated Comprehensive Health Status, the highest percentage of population reporting an activity limitation, and the second from lowest percentage of population reporting excellent self-rated health.

**Table 1**

<b>Registered Nurses Employed in Nursing by Province and Canada, 1993 &amp; 1998</b>			
	<b>1993</b>	<b>1998</b>	<b>% Change</b>
NF	5,147	5,340	3.7
PE	1,247	1,277	2.4
NS	9,129	8,525	-6.6
NB	7,521	7,456	-0.9
PQ	59,863	56,825	-5.1
ON	84,343	78,825	-6.5
MB	10,258	10,185	-0.7
SK	8,390	8,455	0.8
AB	21,835	21,988	0.7
BC	27,384	28,004	2.3
YT	-	241	-
NT	513	530	3.3
<b>Canada</b>	<b>235,630</b>	<b>227,651</b>	<b>-3.4</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 2**

<b>Registered Nurses Employed in Nursing by 100,000 Population</b>		
	<b>1993</b>	<b>1998</b>
NF	891	986
PE	938	933
NS	986	911
NB	1003	990
PQ	833	773
ON	785	687
MB	916	893
SK	833	823
AB	813	747
BC	755	696
YT	-	778
NT	796	783
<b>Canada</b>	<b>816</b>	<b>748</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 3**

<b>Physicians by Province and Canada, 1993 &amp; 1997</b>			
	<b>1993</b>	<b>1997</b>	<b>% Change</b>
NF	971	932	-4.0
PE	179	165	-7.8
NS	1,857	1,766	-4.9
NB	1,056	1,127	6.7
PQ	14,842	15,315	3.2
ON	20,799	20,202	-2.9
MB	2,017	2,013	-0.2
SK	1,507	1,474	-2.2
AB	4,584	4,511	-1.6
BC	7,243	7,622	5.2
YT	39	50	-
NT	61	66	8.2
<b>Canada</b>	<b>55,155</b>	<b>55,243</b>	<b>0.2</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 4**

<b>Specialists by Province and Canada, 1993 &amp; 1997</b>			
	<b>1993</b>	<b>1997</b>	<b>% Change</b>
NF	329	363	10.3
PE	72	70	-2.8
NS	814	842	3.4
NB	424	470	10.8
PQ	7,422	7,756	4.5
ON	10,034	10,429	3.9
MB	966	1,009	4.5
SK	558	606	8.6
AB	2,023	2,136	5.6
BC	3,137	3,433	9.4
YT	3	7	133.3
NT	12	14	16.0
<b>Canada</b>	<b>25,794</b>	<b>27,135</b>	<b>5.2</b>

SOURCE: Canadian Institute for Health Information (CIHI)



**Table 5**

<b>Physicians by 100,000 Population by Province and Canada, 1993 &amp; 1997</b>		
	<b>1993</b>	<b>1997</b>
NF	167	165
PE	134	120
NS	199	187
NB	140	148
PQ	204	207
ON	191	178
MB	179	177
SK	149	145
AB	170	161
BC	200	196
YT	132	158
NT	95	99
<b>Canada</b>	<b>189</b>	<b>183</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 6**

<b>Specialists by 100,000 Population by Province and Canada, 1993 &amp; 1997</b>		
	<b>1993</b>	<b>1997</b>
NF	64	56
PE	51	54
NS	89	87
NB	62	56
PQ	105	102
ON	92	92
MB	89	86
SK	59	55
AB	76	75
BC	88	86
YT	22	10
NT	21	19
<b>Canada</b>	<b>90</b>	<b>89</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 7**

Comparison of Registered Nurses Employed in Nursing to Physicians						
Province/Territory	1993			1997		
	Nurses	Phys.	Ratio	Nurses	Phys.	Ratio
NF	5,147	971	5.3:1	5,210	932	5.6:1
PE	1,247	179	7.0:1	1,281	165	7.8:1
NS	9,129	1,857	4.9:1	8,587	1,766	4.9:1
NB	7,521	1,056	7.1:1	7,589	1,127	6.7:1
PQ	59,863	14,842	4.0:1	59,160	15,315	3.9:1
ON	84,343	20,799	4.1:1	78,067	20,202	3.9:1
MB	10,258	2,017	5.1:1	10,510	2,013	5.2:1
SK	8,390	1,507	5.6:1	8,456	1,474	5.7:1
AB	21,835	4,584	4.7:1	21,428	4,511	4.8:1
BC	27,384	7,243	3.8:1	28,974	7,622	3.8:1
YT	-	39	-	252	50	5.0:1
NT	513	61	8.4:1	476	66	7.2:1
<b>Canada</b>	<b>235,630</b>	<b>55,155</b>	<b>4.3:1</b>	<b>229,990</b>	<b>55,243</b>	<b>4.2:1</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 8**

Comparison of Registered Nurses Employed in Nursing to Specialists						
Province/Territory	1993			1997		
	Nurses	Spec.	Ratio	Nurses	Spec.	Ratio
NF	5,147	329	15.6:1	5,210	363	14.4:1
PE	1,247	72	17.3:1	1,281	70	18.3:1
NS	9,129	814	11.2:1	8,587	842	10.2:1
NB	7,521	424	17.7:1	7,589	470	16.1:1
PQ	59,863	7,422	8.1:1	59,160	7,756	7.6:1
ON	84,343	10,034	8.4:1	78,067	10,429	7.4:1
MB	10,258	966	10.6:1	10,510	1,009	10.4:1
SK	8,390	558	15.0:1	8,456	606	14.0:1
AB	21,835	2,023	10.8:1	21,428	2,136	10.0:1
BC	27,384	3,137	8.7:1	28,974	3,433	8.4:1
YT	-	3	-	252	7	36:1
NT	513	12	42.8:1	476	14	34:1
<b>Canada</b>	<b>235,630</b>	<b>25,794</b>	<b>9.1:1</b>	<b>229,990</b>	<b>27,135</b>	<b>8.4:1</b>

SOURCE: Canadian Institute for Health Information (CIHI)

**Table 9**

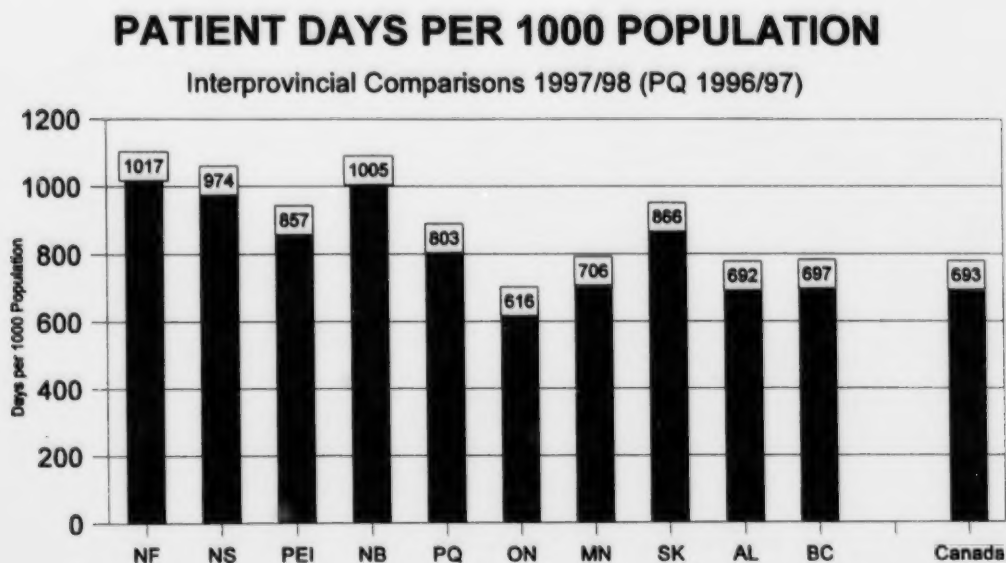
<b>Registered Nurses Employed in Nursing</b>				
	<b>Nova Scotia</b>		<b>Canada</b>	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Hospital	5,734	66.8	137,074	60.1
Mental Health Centre	196	2.3	3,729	1.6
Home Care Agency	310	3.6	9,794	4.3
Community Health Agency	453	5.3	15,711	6.9
Nursing Station	7	0.0	956	0.4
Nursing Home	982	11.4	27,608	12.1
Rehabilitation Centre	178	2.1	2,610	1.1
Educational Institution	163	1.9	5,327	2.3
Physician's Office	130	1.5	5,820	2.5
Association/Government	118	1.4	3,405	1.5
Occupational Health	116	1.4	3,324	1.5
Private Nursing	85	1.0	2,045	0.9
Self-employed	52	0.6	1,620	0.7
Not stated	-	-	2,643	1.2
Other	63	0.7	6,593	2.9
<b>Total</b>	<b>8,587</b>	<b>100.0</b>	<b>228,259</b>	<b>100.0</b>

SOURCE: Registered Nurse Management Data 1997, Health Statistics Division, Statistics Canada

**Table 10**

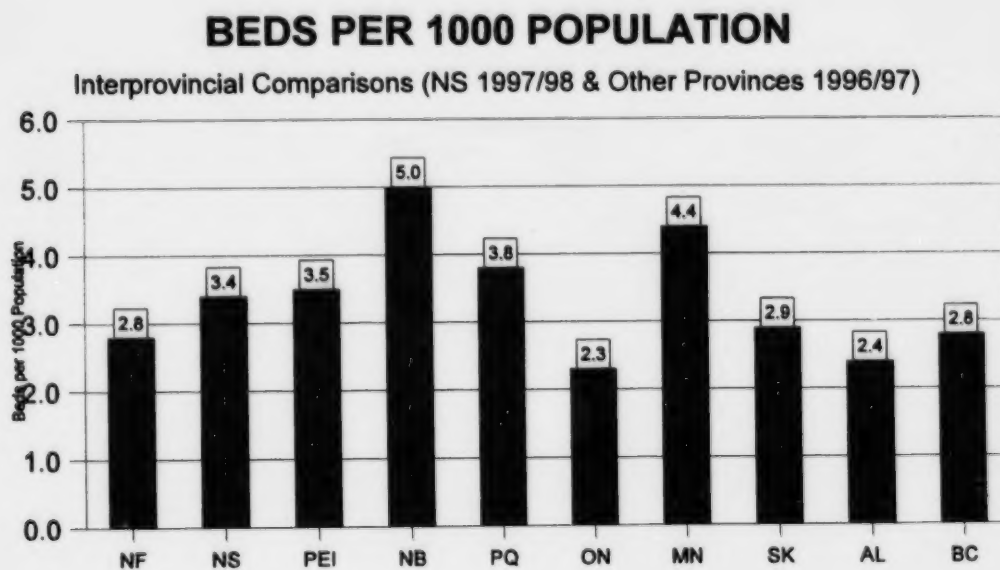
<b>Selected Interprovincial Health Status Comparisons</b>					
<b>Province</b>	<b>1996 Life Expectancy<sup>1</sup></b>	<b>Age Std Deaths per 100,000<sup>2</sup></b>	<b>Functional Health<sup>3</sup></b>	<b>Any Activity Limitation<sup>4</sup></b>	<b>Self-rated Health<sup>5</sup></b>
NF	77.7	710	91	16	26
PE	77.2	753	89	20	22
NS	77.8	700	85	25	20
NB	78.2	680	87	19	21
PQ	78.4	666	90	15	27
ON	78.9	648	88	14	25
MB	78.2	668	87	18	21
SK	78.4	640	86	22	17
AB	78.7	638	88	18	25
BC	79.0	623	86	21	25

**Figure 1**



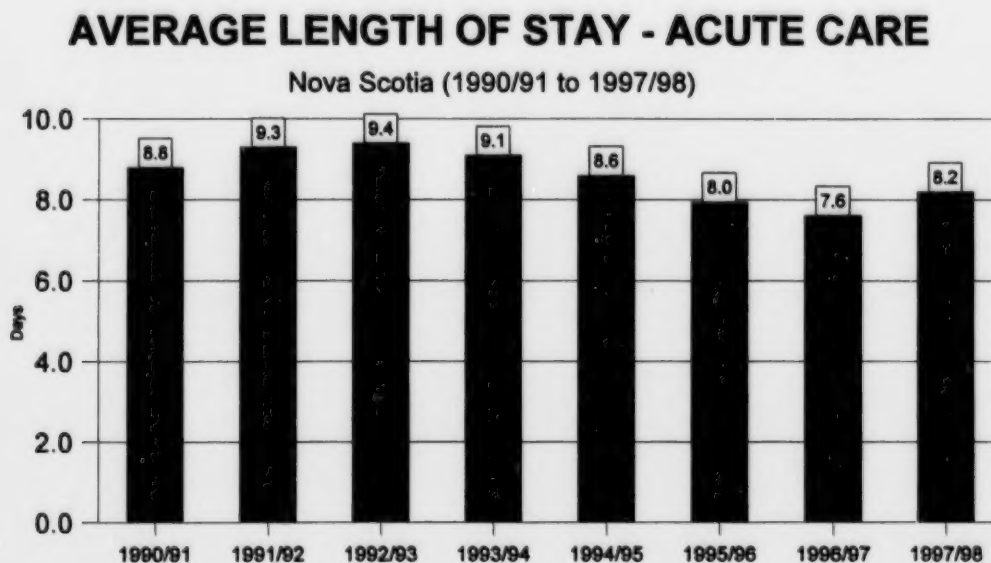
SOURCE: Health Information and Evaluation, NS Department of Health

**Figure 2**



SOURCE: Health Information and Evaluation, NS Department of Health

**Figure 3**



SOURCE: Health Information and Evaluation, NS Department of Health

- 
1. Compendium of Vital Statistics 1996, Statistics Canada
  2. Health Indicators 1997, Statistics Canada
  3. Percent of population with a score greater than 80 on the McMaster Comprehensive Health Status Measure, National Population Health Survey (NPHS) 1996-97
  4. Percent of population reporting an activity limitation, NPHS
  5. Percent of population reporting excellent self-rated health, NPHS

**Appendix R**

**Nursing Regulation**



## REGULATION OF THE NURSING PROFESSION

Professional regulation, the chief function of which is to protect the public, is an important element of nursing. Government has decided to regulate the practice of nursing by allowing nurses to govern themselves. This has been achieved through legislation, in which appropriate scopes and standards of practice have been established and the necessary authority to enforce those standards has been delegated.

### Standards of Practice

For public protection, legislation needs to establish roles for registered nurses and practical nurses appropriate for their competencies. Since it is in the public interest for health professionals to work together to maximize the quality and choice of services, legislation also needs to permit flexibility. In pursuit of this, overlapping scopes of practice are preferable to exclusive scopes. The trend in health professions legislation, as manifested in the relatively recent Ontario and British Columbia statutes, is to combine a non-exclusive scope of practice statement, which describes the activities of a profession, with controlled, or reserved acts which may be performed only by regulated professionals practicing within their scopes of practice. In Nova Scotia the *Registered Nurses Act*, proclaimed in February, 1997, incorporates amendments requested by the Registered Nurses Association of Nova Scotia, including an updated scope of practice statement. The statement describes activities of the profession of registered nursing, without becoming too task-specific and exclusionary.

### Nurse Practitioners

The practice of nursing is circumscribed by the *Medical Act*, which prohibits anyone other than a licensed medical practitioner from practicing or offering to practice medicine. Although nurse practitioners are not regulated in Nova Scotia, Dalhousie University plans to establish a new diploma program for the practice. It appears likely that the program will train nurses to undertake activities currently within the legislated scope of practice of medical practitioners, but outside of the current scope of practice of registered nurses. Ideally, there would be a direct match between the content of provincial education programs, for health professionals, and the legislated scope of practice for the professions.

As with nurses, medical practitioners also are self-governing. The College of Physicians and Surgeons of Nova Scotia regulates the practice of medicine. It is the responsibility of the College to enforce the provisions of the *Medical Act*, including provisions restricting medical practice to licensed practitioners. Nevertheless, rigid enforcement of the Act has not been the practice of the College. For example, while it would appear that practicing midwives in Nova Scotia may be acting in contravention of the *Medical Act*, the College has not taken action against them. Therefore, if graduates

of the Dalhousie nurse practitioner program were to engage in activities within the statutory scope of practice of medical practitioners, such as prescribing medications, it would be the responsibility of the College of Physicians and Surgeons to determine what, if any, action to take.

Through the cooperation of the nursing and medical professions, existing legislation could be used to allow graduates of the new nurse practitioner program to engage in activities currently within the scope of practice of medical practitioners. The *Medical Act* contains provisions for the delegation of medical acts, as well as for a Joint Committee on Delegated Medical Acts, which includes representatives of the Registered Nurses Association of Nova Scotia. This could be the preferred way of advancing primary care pilot projects involving nurse practitioners. Should government conclude that it would be in the public interest for specially trained nurses to have an expanded scope of practice, suitable legislative amendments would be appropriate.

### **Agreement on Internal Trade**

The Agreement on Internal Trade (AIT), which came into force in 1995, obligates Canadian governments and regulators with delegated authority to remove or reduce inter-jurisdictional barriers to the movement of workers. At present, the registered nursing profession is able to comply with labour mobility provisions of the AIT. However, if any jurisdiction(s) should decide to establish the BScN as the minimum entry to practice requirement for all registered nurses, accommodation mechanisms will need to be developed in order for the profession to continue to comply with the Agreement.

### **Licensed Practical Nurses**

The existing legislation for Licensed Practical Nurses does not contain a scope of practice statement, and the scope of practice statement contained in the regulations is rather vague. The *Licensed Practical Nurses Act* would benefit from being updated. The Practical Nurses Licensing Board, with the support of the Licensed Practical Nurses Association of Nova Scotia, proposed amendments to the existing legislation in February, 1999. The proposed amendments are under consideration by government.

### **Umbrella Legislation**

As demonstrated by the enactment of the *Occupational Therapists Act* and the *Physiotherapy Act*, the Department of Health has recently been taking a more consistent approach to health professions legislation than it had previously. There are significant advantages to a consistent legislative regime for health professions. It is best to use the most effective provisions for all professions, rather than to have inferior provisions for some professions. Uniformity in legislation also improves understanding

and simplifies matters for those who deal with it. Moreover, it discourages arbitrary actions and allows different professions to share solutions to common problems. Ontario, British Columbia, and Alberta have each developed umbrella legislation, which covers all self-regulated health professions. As a result, within these provinces the process of governance is consistent for all self-regulated health professions. The eventual adoption of such a model for the regulation of health professions in Nova Scotia may be beneficial.

## **Appendix S**

### **Health Management Information Systems**

## Introduction

Planning for health human resources has been identified as a priority for the province of Nova Scotia. Historically, such planning has been characterized as reactive versus proactive, in part, because the reliable, consistent and coordinated human resources information which is required to support long and short term human resources planning decisions, has not been available in an integrated, timely and useful manner. In order to support future health human resources decisions, an information system which will, in effect, be the foundation of such planning decisions, must be designed.

The goal of this project is to recommend a design for the structure of an integrated health human resources information system. Specifically, the objectives are:

- Review and identify available information and its utilization at the facility, regional and NDO level.
- Identify the various information components which are required in a health (nursing) human resources information system; including gaps in existing information collection.
- Identify and recommend proposed mechanisms for collecting information.
- Propose a process for updating and maintaining the information system for the purpose of analysis.
- Identify mechanisms for monitoring external environmental variables which could impact on health human resources planning.

This project will focus first on a nursing human resources information system. The recommended design of this system will be used as a model for the development of information systems for other health professions.

The project will be implemented in a series of phases beginning with the identification and collection of immediate information requirements and will include:

- Consultation and site visits with appropriate personnel at Regional Health Boards, Non-Designated Organizations, Long Term Care Facilities and Home Care Institutions to learn what information is currently collected, how it is collected, how it is reported and used.
- Identification of the requirements of a health human resources information system:

- Internally conducted brainstorming
  - External consultation with appropriate RHB, NDO, LTC and H/C personnel.
  - Review of existing information systems in other Canadian jurisdictions (literature, provincial database administrators)
  - final development of key information requirements and their definitions.
- Identify and recommend proposed mechanisms for collecting information:
    - review data collection mechanisms of other jurisdictions.
    - development of recommended data collection forms (draft) or other mechanism (detailed description) through internal consultation.

Propose a process for updating and maintaining the information system:

- internal and external review of possible processes of updating and maintaining the information system.
  - assessment and selection of recommended process.
- Identification of a mechanism for monitoring external environmental variables:
    - identify external environmental variables which could impact on health human resources planning.
    - identify information resources and recommend data collection and monitoring methods.
  - Development of the Final Report
    - description of the project methodology, resulting recommended information system and supporting documentation.

The proposed nursing components and phases of implementation are attached.



## **PHASE I: Immediate Data Requirements**

### **Registration Information**

- registration number
- age
- year of graduation
- initial education
- other nursing education
- enrolment in continuing education
- additional nursing qualifications\*
- employment status
- average hours worked per week\*
- number of years of active practice\*
- five-year employment history
- registration in other provinces - current or previous year (dates, registration numbers)\*
- exit questions for non-registrants\*

### **Health Care Institution Information**

- institution type/sector
- budgeted FTEs
- hours worked - regular hours, overtime hours
  - area of nursing
  - employment status
- sick time
- cost of hours
  - area of nursing
  - employment status
- total head count and by
  - nursing position (direct care/supervisory)
  - area of nursing
  - employment status
  - union
  - rate of pay
  - rate of benefits
  - pensionable service
- vacancies
  - area of nursing
  - employment status
- turnover
  - area of nursing
  - employment status

### **Educational Institution Information**

- number of applicants
- number of graduates
- attrition rate

### **Government Department and Agency Information**

- physician information (NS Department of Health)
- hours of patient care (NS Department of Health)
- nurse to population ratios (Canadian Institute for Health Information)
- Registered Nurses Management Data (Statistics Canada)
- occupation projections (NS Department of Labour/Human Resources Development Canada)
- migration statistics (Statistics Canada)
- unemployment figures (Human Resources Development Canada)

### **PHASE II: Short-term Data Requirements**

Refine minimum data set from Phase I and identify all key requirements of a health human resources information system through:

- review of existing information systems in other Canadian jurisdictions;
- internal consultation;
- consultation with appropriate Regional Health Board, Non-Designated Organization, Long-term Care and Home Care personnel.

### **PHASE III: Mechanisms to Collect and Report Information**

- development of data collection mechanisms
- identification of process of updating and maintaining data
- development of process for reporting information

### **PHASE IV: Integration with Other Health Human Resources Information Systems**

### **PHASE V: Integration with Other Non-Human Resources Information Systems**

## **Appendix T**

### **Research and Consultation: External Contributors**

## RESEARCH AND CONSULTATION : EXTERNAL CONTRIBUTORS

Wayne Marsh and Gail Boone  
Stakeholder Consultation

Jean Hughes, Gail Tomblin Murphy and Michael Pennock  
Future Demand for Registered Nurses and Licensed Practical Nurses in Nova  
Scotia

Betty Mattson  
Nursing Workload Measurement Systems in Nova Scotia

## **Appendix U**

### **Nursing Salaries and Collective Agreements**

# **CANADIAN NURSING SALARIES AND COLLECTIVE AGREEMENTS** **JANUARY 1999**

Province	Annual Salary Minimum /Maximum		Hourly Rate Minimum /Maximum		Number of Steps	Daily Hours of work	Effective Date	Expiry Date
Newfoundland	\$32,181.98	\$40,795.86	-	-	7	7.5	1/4/94	31/12/95
Prince Edward Island	\$34,495.50	\$42,022.50	\$17.69	\$21.55	6	7.5	1/4/97	31/03/99
<b>Nova Scotia</b>	<b>\$38,064</b>	<b>\$44,692</b>	<b>\$19.52</b>	<b>\$22.92</b>	<b>6</b>	<b>7.5</b>	<b>1/1/98</b>	<b>31/10/2000</b>
New Brunswick	\$34,412.85	\$41,890.50	\$17.58	\$21.40	6	7.5	1/7/98	30/06/2000
Quebec	\$30,339.66	\$44,071.95	\$16.04	\$23.30	12	7.5	1/1/98	30/06/98
Ontario	\$35,685.00	\$52,728.00	\$18.30	\$27.04	9	7.5	1/4/97	31/03/98
*Manitoba	\$36,995.40	\$43,624.75	\$18.36	\$21.65	6	7.75	1/1/96	31/03/98
Saskatchewan	\$36,091.77	\$43,107.45	\$18.52	\$22.12	6	8	1/4/98	31/03/99
Alberta	\$37,761.94	\$46,309.28	\$19.66	\$24.11	8	7.36	1/4/98	31/03/99
British Columbia	\$39,274.56	\$48,634.56	\$20.98	\$25.98	6	7.5	30/11/97	3/2001
Northwest Territories	\$41,672.00	\$49,077.00	\$21.37	\$25.17	6	7.5	1/4/93	31/09/97
Yukon Territory	\$47,424.00	\$59,281.00	\$24.32	\$30.41	8	7.5	1/10/93	31/09/97
Source : Nova Scotia Nurses Union / Rick Cameron								

\* Negotiating 7% over 30 years.



# **NURSING SALARIES, COLLECTIVE AGREEMENT**

## **ADDENDUM**

### **NEWFOUNDLAND AND LABRADOR NURSES UNION**

(Collective agreement expired Dec. 31, 1995)

- strike date March 24, 1999 - legislated back to work April 2, 1999. Nurse returned - work to rule. Legal remedies explored. Package imposed/ binding arbitration removed. ( Package includes 7 % over 39 months).

#### **Issues**

- 1) wages / compensation
- 2) casualization
- 3) creation of more permanent positions to address workload.

### **NOVA SCOTIA NURSES' UNION**

Collective Agreement expires:

- Acute Care - October 31, 2000
- HFSC - October 31, 1999
- VON - October 31, 2001
- Canadian Blood Services

NSNU - Start ( April 1, 1999)  
RN - \$19.52  
Top - \$ 22.91

NSGEU - QEII - October 31, 2000

### **NEW BRUNSWICK NURSES' UNION**

Acute Care expires January 2000  
LTC expires, June 30, 2000

#### **FIIQ**

Currently in negotiations (began in November 1998)

## **ONTARIO NURSES ASSOCIATION**

Preparing for negotiations (Collective Agreement expired March 31, 1998)

## **MANITOBA NURSES' UNION**

Mediator appointed - report due April 26, 1999

(Government announced 7 million dollar recruitment/retention fund)

## **SASKATCHEWAN UNION OF NURSES**

Currently in negotiations - strike vote taken - strike notice - April 7, 1999 at 2000 hours.  
(Collective Agreement expired March 31, 1999)

## **UNITED NURSES OF ALBERTA**

Currently in negotiations ( looking for 20% increase plus benefits)

## **BRITISH COLUMBIA NURSES' UNION**

Recently concluded negotiation ( 10 months of bargaining - 5 weeks of job action)  
(Collective Agreement expires March 31, 2001)

## **Appendix V**

### **Patient Care Leadership Group Letter**

**TABLE I**

**STAFFING COSTS 1999-2000 TO MAINTAIN CURRENT LEVEL OF  
PATIENT CARE SERVICES**

<b>RHB/NDO</b>	<b>Nursing Staff</b>	<b>Requirements</b>	<b>Cost (\$)</b>	<b>Total (\$)</b>
Eastern	RN	32.5	1,722,000	1,722,000
	LPN	1.0	na	
Western	RN	71	3,558,000	3,818,000
	LPN	2.0	260,000	
Central	RN	42.84	2,320,000	2,632,000
	LPN	9.31	312,000	
Northern	RN	35.1	1,653,400	1,965,400
	LPN	6.4	312,000	
CBHCC	RN	100	5,244,100	5,244,100
QEII	RN	50	2,650,000	2,650,000
IWK/Grace	RN	98.64	5,227,920	5,227,920
NS Hospital	RN	42.5	2,278,800	2,278,800
Home Care	RN	20	1,120,000	1,120,000
Long Term Care	LPN	(400)	13,000,000	13,000,000
<b>Total</b>	<b>RN</b>	<b>492.6</b>	<b>25,614,160</b>	<b>\$39,658,220</b>
	<b>LPN</b>	<b>430.86</b>	<b>14,044,060</b>	

## EDUCATION / PRODUCTION

TABLE II

### EDUCATION COST

Education Area	Details	Cost (\$)
Continuing Education		1,200,000
Orientation Preceptorship		2,000,000
Recruitment	Province Wide Recruitment Strategy for Universities	150,000
	5,000 for incentives per nurse to compete with other provinces.	1,000,000
Specialty Education		300,000
Entry Level Education		283,000
<b>Total</b>		<b>\$4,933,000</b>

Total Staffing Costs	\$39,658,220
Total Education Costs	\$4,933,000
<b>Grand Total</b>	<b>\$44,591,220</b>

**NOTE:** In addition, consideration needs to be given to initiate a satellite BscN program.

## **Appendix W**

### **Nursing Investment Strategies: Inter-Provincial Comparisons**



Survey of Federal/Provincial/Territorial Nursing Actions since January 1999

Jurisdiction	Bargaining/Contact Negotiations and New Initiatives	Comments
Federal	<p><u>New Initiatives</u></p> <ul style="list-style-type: none"> <li>• \$25 million NURSE Fund</li> <li>• Appointment of the Executive Director of Nursing Policy</li> </ul>	<ul style="list-style-type: none"> <li>• This nursing research fund will focus on initiative to address current issues in nursing.</li> <li>• Dr. Judith Shamian will provide policy direction related to health and nursing issues.</li> </ul>

Survey of Federal/Provincial/Territorial Nursing Actions since January 1999

Jurisdiction	Bargaining/Contact Negotiations and New Initiatives	Comments
Northwest Territories	<p><u>Contract Negotiations</u></p> <ul style="list-style-type: none"> <li>• Collective agreement signed April 1, 1999 retroactive to April 1, 1998.</li> <li>• Guaranteed 2% increase each year</li> <li>• Adjustment of pay scale as of April 1, 1999</li> </ul> <p><u>New Initiative</u></p> <ul style="list-style-type: none"> <li>• Retention bonus</li> <li>• Local pool of locum for nursing for community-based positions</li> <li>• Aggressive retention and recruitment strategy</li> <li>• Completed review of the advanced nursing skills program recommending move towards baccalaureate degree for community nursing</li> </ul>	
Yukon	<p><u>Contract Negotiations</u></p> <ul style="list-style-type: none"> <li>• There is no contract negotiation at this time.</li> </ul>	<ul style="list-style-type: none"> <li>• Recruitment remains an issue, especially for nurses with an expanded scope of practice working in northern and remote areas.</li> </ul>

**Survey of Federal/Provincial/Territorial Nursing Actions since January 1999**

<b>Jurisdiction</b>	<b>Bargaining/Contact Negotiations and New Initiatives</b>	<b>Comments</b>
British Columbia	<p><u>Contract Negotiations</u></p> <ul style="list-style-type: none"> <li>• 0%, 0%, 2%;</li> <li>• nurses provided with two side agreements:</li> </ul> <p><u>New Initiatives</u></p> <ul style="list-style-type: none"> <li>• Create a Task Force on Recruitment/Retention</li> <li>• \$50 million over term of the agreement to hire 1,000 new nurses.</li> </ul>	<ul style="list-style-type: none"> <li>• consistent with public service agreements;</li> <li>• Task Force membership consists of employers, unions and government;</li> <li>• final report due March 2000.</li> </ul>

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Alberta	<p><u>Contract Negotiations</u></p> <ul style="list-style-type: none"> <li>With the contract expiring on April 1, 1999, Alberta hospitals and the United Nurses of Alberta entered contract negotiations</li> </ul>	<ul style="list-style-type: none"> <li>nurses asking 19% over 2 years and 2000 new RN jobs within one year;</li> <li>Health Authorities offering 6% over 2 years and to hire 1500 new front-line health workers;</li> <li>discussions to go to arbitration;</li> <li>Alberta is preparing for a nurses' strike.</li> </ul>

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Saskatchewan	<p><u>Contact Negotiations</u></p> <ul style="list-style-type: none"> <li>• 2%, 2%, 2% wage increase and 2.5% benefit increase</li> <li>• \$7.5 million recruitment and retention fund over 3 years, no details on how it will be used;</li> <li>• MOU signed, details being worked out between employers, nurses and government.</li> </ul> <p><u>New Initiatives</u></p> <ul style="list-style-type: none"> <li>• Study was done by government re nursing</li> </ul>	<ul style="list-style-type: none"> <li>• nurses originally tabled 22% immediate increase;</li> <li>• nurses went on strike and were legislated back to work, wage settlement was legislated;</li> <li>• Saskatchewan considering providing additional 1%, no details about how it would be distributed;</li> <li>• strike talk continues among the nurses</li> <li>• employers concerned that the MOU provided to much power to nurses.</li> <li>• an Independent Assessment Concerns Committee was established to assess and make recommendations</li> </ul> <ul style="list-style-type: none"> <li>• results are not available</li> </ul>

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Manitoba	<p><u>Contact Negotiations</u></p> <ul style="list-style-type: none"> <li>• Contract negotiations are near completion</li> <li>• 5%, 3%, 3% for wages and benefit over 3% years</li> </ul> <p><u>New Initiatives</u></p> <ul style="list-style-type: none"> <li>• Nurses Fund of \$7 million will be established</li> <li>• Nursing Task Force established</li> <li>• Licenced Practical Nurses increased</li> </ul>	<p>General ratification has been achieved (2 locals are not in agreement)</p> <ul style="list-style-type: none"> <li>• premiums will be allocated for shift and weekend premiums</li> <li>• each nurse will have \$200 each for approved education courses</li> <li>• details of Fund have yet to be developed. It may included the Fund, which is managed by a Committee, will address recruitment &amp; retention, relocation \$ for nurses returning to Manitoba, professional development, creation of new and permanent positions</li> <li>• will report to employers to make recommendations re supply, education, trends and future needs</li> <li>• \$\$\$ for increasing enrolment in LPN programs. Funds are coming from health</li> </ul>



Jurisdiction	Bargaining/Contact Negotiations and New Initiatives	Comments
Ontario	<p><u>Contact Negotiations</u></p> <ul style="list-style-type: none"> <li>• arbitration provided for 2 year agreement (April 1/96 - March 31/98) with 2% wage increase retroactive to April 1/97</li> <li>• increased pregnancy/parental top up to 84% fro 75%</li> <li>• improved job security and layoff provisions</li> <li>• severance package and retraining options</li> </ul> <p><u>Initiatives</u></p> <p>Report from the Nursing Task Force, <i>Good Nursing, Good Health</i> was published in January 1999</p>	<ul style="list-style-type: none"> <li>• the Ontario Hospital Association had originally tabled a 20.3% rollback of wages and benefits;</li> <li>• a 2% increase for nurses working in Ontario at \$50,000 annual salary amounts to \$80 million annually (approximately 80,000 nurses).</li> <li>• As a result of the Report, the government announced the creation of 10,000 jobs for nurses and \$375 million to address nursing issues in the province</li> </ul>

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Quebec	<p><u>Contact Negotiations</u></p> <ul style="list-style-type: none"> <li>Nurses were in a position to negotiate their contracts on May 31, 1999.</li> </ul>	<ul style="list-style-type: none"> <li>government offers same as other public sector 1%, 1%, 2%;</li> <li>main nursing union asking for: (1) overall increase in salary scale across all grid sectors;</li> <li>(2) 5%, 5%, 5%</li> <li>talk ongoing</li> <li>as of May 31/99 members of the main nursing union are starting pressure tactics to protest against stalled negotiations with the government.</li> </ul>

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Newfoundland	<p><u>Contact</u></p> <ul style="list-style-type: none"> <li>• 7% over 39 months;</li> <li>• 120 new nursing jobs;</li> <li>• 200 conversions (from casual to permanent)</li> <li>• 300 potential conversions</li> </ul>	<ul style="list-style-type: none"> <li>• March 99: nurses on strike for 9 days;</li> <li>• April 1/99: nurses legislated back to work;</li> <li>• settlement legislated consistent with public sector awards;</li> <li>• \$4 million provided for more ward clerks and aids;</li> <li>• negotiations ongoing concerning casualisation and workload.</li> </ul>

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Prince Edward Island	<p><u>Contract Negotiations</u></p> <ul style="list-style-type: none"> <li>• April 6<sup>th</sup> budget announcement included \$3 million to hire 60 new and \$12 million towards a Health Care Stabilization Fund</li> <li>• MOU has been submitted to cabinet re the use of the Funds.</li> </ul> <p><u>New Initiatives</u></p> <p>Discussions with stakeholders</p>	<ul style="list-style-type: none"> <li>• Presently negotiations are taking place between PEI and Nurses Union</li> <li>• Roundtable of key stakeholders was in the Spring to identify issues and strategies for nursing</li> </ul>

Jurisdiction	Bargaining/Contact Negotiations and New Initiatives	Comments
New Brunswick	<p><u>Contract Negotiations</u></p> <ul style="list-style-type: none"> <li>• May 4<sup>th</sup> budget announcement of funding for nursing positions</li> <li>• Nursing contracts expire on June 30</li> <li>• Hospital Corporations have established 85 full• time and 113 part• time regular positions</li> </ul> <p><u>New Initiatives</u></p> <ul style="list-style-type: none"> <li>• Ministry of Health are: involved in two Projects</li> </ul>	<ul style="list-style-type: none"> <li>• positions for nursing homes, school-based health, hospitals, emergency rooms and mental health areas</li> <li>• Nurses unions have an aggressive campaign on "No More Excuses"</li> <li>• this occurred after an assessment of casual hours and conversion to permanent positions</li> </ul> <ol style="list-style-type: none"> <li>1. To improve client/patient access to health services by assessing nursing competencies in specific areas and removing barriers</li> <li>2. Looking at models for advanced practice</li> </ol> <ul style="list-style-type: none"> <li>• Projection Models will be developed to look at supply and demand.</li> </ul>